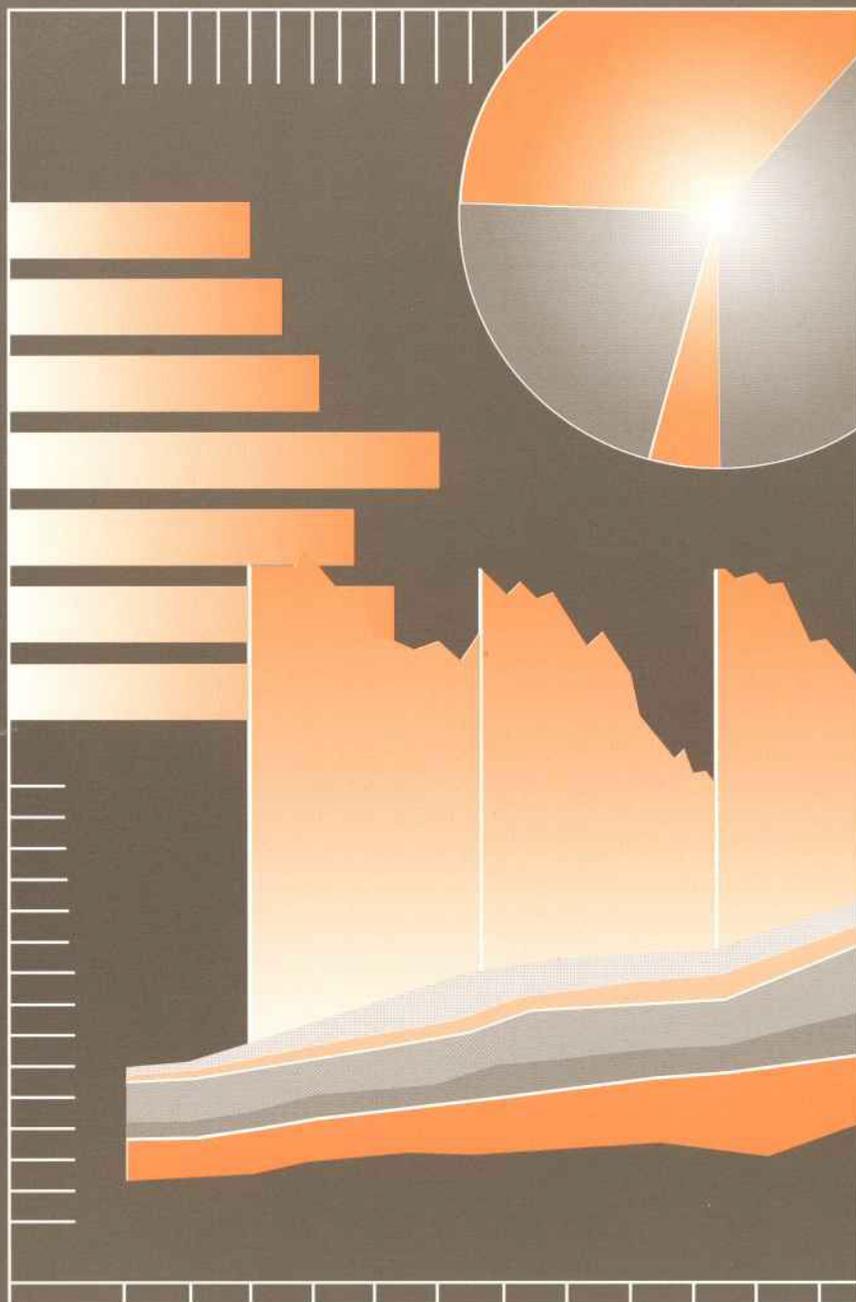


NCI

# FACT BOOK

National  
Cancer  
Institute



1995

NATIONAL INSTITUTES  
OF HEALTH

NCI

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# FACT BOOK

National  
Cancer  
Institute

1995

U.S. DEPARTMENT  
OF HEALTH AND  
HUMAN SERVICES

Public Health  
Service

National  
Institutes of  
Health

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The information set forth in this publication is compiled and amended annually by the financial management staff of the National Cancer Institute and is intended primarily for use by members of the Institute, principal advisory groups to the Institute and others involved in the administration and management of the National Cancer Program. Questions regarding any of the information contained herein may be directed to the Financial Management Branch, National Cancer Institute, 9000 Rockville Pike, Bethesda, Maryland, 20892.

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This publication may be viewed on the World Wide Web by pointing a browser to: [www.nci.nih.gov](http://www.nci.nih.gov)



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# National Cancer Institute

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## Director's Biography

### Richard D. Klausner, M.D.

Dr. Klausner was appointed as the Director of the National Cancer Institute (NCI) on August 1, 1995. Since 1984 he has been Chief of the Cell Biology and Metabolism Branch of the National Institute of Child Health and Human Development.

Dr. Klausner received his undergraduate degree from Yale University and his medical degree from Duke University. After post-graduate medical training at Harvard, he began his research career at the National Institutes of Health in 1979.

Dr. Klausner is well known for his contributions to multiple aspects of cell and molecular biology. Over the past five years, he has been recognized as one of the 20 most highly cited scientists in the world in this burgeoning area of biology and biomedical research. Dr. Klausner's research has illuminated the genetics and biochemistry of metals as essential but toxic nutrients for virtually all forms of life, has illuminated the pathways by which molecules traffic and speak to each other within the cell, and has described novel mechanisms by which genes are regulated.

His work has been recognized with numerous honors and awards including the Outstanding Investigator Award from the American Federation of Clinical Research and the William Damashek Prize for Major Discoveries in Hematology. In 1993, Dr. Klausner was elected to the National Academy of Sciences. Dr. Klausner is the immediate past President of the American Society for Clinical Investigation. He is the author of over 250 scientific articles and several books.

Since 1993, Dr. Klausner has chaired the project, overseen by the National Academy of Sciences, charged with writing standards for science education for the United States from kindergarten through 12th grade. This project represents the first comprehensive attempt to describe a vision of scientific literacy for all students and to provide the criteria for the educational system required to achieve the fulfillment of that vision.

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## Former Directors of the National Cancer Institute

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**Dr. Samuel Broder**

December 1988-March 1995

Dr. Broder joined NCI in 1972 as a Clinical Associate in the Metabolism Branch, DCBD. In 1975, he became an investigator in DCT, in 1981, he became Associate Director for NCI's Clinical Oncology Program. In 1985 he led the laboratory team that discovered the therapeutic effects of AZT and other drugs now approved for the treatment of AIDS including, ddi and ddc.

**Dr. Vincent T. DeVita, Jr., M.D.**

January 1980 - June 1980 (Acting)  
July 1980 - August 1988

Dr. DeVita joined NCI in 1963 as a Clinical Associate in the Laboratory of Chemical Pharmacology. He served NCI as head of the Solid Tumor Service, Chief of the Medicine Branch, Director of the Division of Cancer Treatment and Clinical Director prior to his appointment as Director of NCI.

**Dr. Arthur Canfield Upton, M.D.**

July 1977 - December 1979

Prior to his tenure as NCI Director, Dr. Upton served as Dean of the School of Basic Health Sciences at the State University of New York at Stony Brook.

**Dr. Frank Joseph Rauscher, Jr., Ph.D.**

May 1972 - October 1976

Dr. Rauscher served as Scientific Director for Etiology, NCI, prior to his appointment as Director of NCI in 1972.

**Dr. Carl Gwin Baker, M.D.**

November 1969 - July 1970 (Acting)  
July 1970 - April 1972

During his tenure with PHS, Dr. Baker served as Scientific Director for Etiology, NCI, and as Acting Director of NCI prior to his appointment as Director in July 1970.

**Dr. Kenneth Milo Endicott, M.D.**

July 1960 - November 1969

Dr. Endicott served as Chief of the Cancer Chemotherapy National Service Center, PHS, and as Associate Director, NIH, prior to being appointed Director, NCI in July 1960.

**Dr. John Roderick Heller, M.D.**

May 1948 - June 1960

Dr. Heller joined PHS in 1934 and became Chief of the Venereal Disease Division prior to his appointment as Director of NCI in 1948.

**Dr. Leonard Andrew Scheele, M.D.**

July 1947 - April 1948

Dr. Scheele served in various capacities during his tenure with PHS prior to his appointment as Assistant Chief and, subsequently, Director of NCI in July 1947.

**Dr. Roscoe Roy Spencer, M.D.**

August 1943 - July 1947

Dr. Spencer became NCI's first Assistant Chief and, subsequently, was appointed Director of the Institute in 1943.

**Dr. Carl Voegtlin, Ph.D.**

January 1938 - July 1943

Dr. Voegtlin served as Professor of Pharmacology and Chief of the Division of Pharmacy at the Hygienic Laboratory prior to becoming the first Director of NCI in 1938.

# National Cancer Advisory Board

Appointees	Expiration of Appointment	Appointees	Expiration of Appointment	Appointees	Expiration of Appointment
Mrs. Barbara K. Rimer, Dr.P.H. Chairperson Duke University Durham, NC	2000	Pelayo Correa, M.D. Louisiana State University Medical Center New Orleans, Louisiana	1998	Deborah K. Mayer, R.N., M.S.N. Portland, OR	1996
Frederick F. Becker, M.D. M.D. Anderson Cancer Center Houston, TX	1996	Robert W. Day, M.D., MPH, Ph.D Fred Hutchinson Cancer Research Center Seattle, Washington	1998	Sydney Salmon, M.D. Arizona Cancer Center Tucson, AZ	1996
J. Michael Bishop, M.D. The George Williams Hopper Research Foundation San Francisco, CA	2000	Kay Dickerson, Ph.D. University of Maryland Baltimore, Maryland	2000	Philip S. Schein, M.D. U.S. Bioscience, Inc. West Conshohocken, PA	2000
Richard J. Boxer, M.D. Urology Specialists, S.C. Milwaukee, Wisconsin	1996	Mrs. Barbara P. Gimbel The Society of Memorial Sloan- Kettering Cancer Center New York, New York	1998	Ellen V. Sigal, Ph.D SJGAL Environmental Inc. Washington, D.C.	1998
Mrs. Zora K. Brown Cancer Awareness Program Washington, D.C.	1998	Alfred L. Goldson, M.D., F.A.C.A.R. Howard University Hospital Washington, D.C.	2000	Vainuts K. Vaitkevicius, M.D. Barbara Ann Karmanos Cancer Institute Detroit, MI	2000
Kenneth Chan, Ph.D Ohio State University Columbus, Ohio	1996	Mrs. Marlene A. Malek Vincent Lombardi Cancer Center McLean, VA	1996	Charles B. Wilson, M.D. Brain Tumor Research Center U.C.S.F. San Francisco, Ca.  Executive Secretary Marvin R. Kalt, Ph. D. National Cancer Institute Bethesda, MD 20892	1998

## EX OFFICIO MEMBERS

The Honorable Donna E. Shalala, Ph.D Secretary for Health and Human Services Washington, D.C.	Kenneth W. Kizer, M.D., M.P.H. Department of Veterans' Affairs Washington, D.C.	Ann Brown Consumer Product Safety Commission Bethesda, MD
Harold Varmus, M.D. Director, National Institutes of Health Bethesda, MD	David A. Kessler, M.D. Food and Drug Administration Rockville, MD	Kenneth Olden, M.D. National Institute of Environmental Health Sciences Research Triangle Park, NC
The Honorable Robert B. Reich Secretary of Labor Washington, D.C.	Linda Rosenstock, M.D., M.P.H. NIOSH Washington, D.C.	Rachel Levinson, Ph.D. Office of Science and Technology Policy Washington, D.C.
The Honorable Edward Martin, M.D. Acting Assistant Secretary of Defense Washington, D.C.	Ari Patrinos, Ph.D. Department of Energy Washington, D.C.	Carol M. Browner Environmental Protection Agency Washington, D.C.

## Alternates to Ex Officio Members

Marilyn A. Fingerhut, Ph.D. NIOSH Washington, D.C.	Hugh W. McKinnon, M.D. Environmental Protection Agency Washington, D.C.	Ralph E. Yodaiken, M.D. Department of Labor Washington, D.C.
John R. Johnson, M.D. Food and Drug Administration Rockville, MD	Raymond L. Sphar, M.D. Department of Veterans' Affairs Washington, D.C.	Captain Bimal C. Ghosh, M.D. Department of the Navy Washington, D.C.
John C. Wooley, Ph.D. Department of Energy Washington, D.C.	Lakisma C. Mishra, Ph.D. Consumer Product Safety Commission Bethesda, MD 20814	Committee Management Officer Ms. Carole Frank National Cancer Institute Bethesda, MD

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## Board of Scientific Counselors Intramural Programs

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### Subcommittee A: Clinical Sciences

Martin D. Abeloff, M.D.	2000	Harold Harvey, M.D.	1999
Chairperson		Stanley J. Korsmeyer, M.D.	2000
		Joanne Kurtzberg, M.D.	2000
Clara D. Bloomfield, M.D.	1998	Alexandra M. Levine, M.D.	1998
Fernando Cabanillas, M.D.	1999	Arthur W. Nienhuis, M.D.	1999
Norman C. Coleman, M.D.	2000	Robert L. Reddick, M.D.	1998
Nancy E. Davidson, M.D.	2000	Jouni Uitto, M.D., Ph.D.	2000
Sarah S. Donaldson, M.D.	1999	Samuel A. Wells, Jr., M.D.	1998
Judah Folkman, M.D.	1999	Executive Secretary-Neal West, Ph.D.	

### Subcommittee B: Basic Sciences

Edward E. Harlow, Ph.D.	1999	Ira Herskowitz, Ph.D.	1999
Chairperson		Peter M. Howley, M.D.	1998
		Tony Hunter	1999
James P. Allison, Ph.D.	2000	Kenneth Olden, Ph.D.	2000
David Baltimore, Ph.D.	2000	Luis Parada	2000
Alan Bernstein, Ph.D.	1998	Carol L. Prives, Ph.D.	2000
Noel Bouck, Ph.D.	1998	Bruce Stillman, Ph.D.	1999
Edward Bresnick, Ph.D.	1999	Susan S. Taylor, Ph.D.	2000
Allen Conney, Ph.D.	1998	Shirley Tilghman, Ph.D.	2000
Robert N. Eisenman, Ph.D.	1998	Jean Y.J. Wang, Ph.D.	1999
Brenda L. Gallie, M.D.	1999	Executive Secretary-Florence Farber, Ph.D.	

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## Board of Scientific Advisors Extramural Programs

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David M. Livingston, M.D.	1999	Enrico Mihich, M.D.	1997
Chairperson		John D. Minna, M.D.	1997
Frederick R. Appelbaum, M.D.	1997	Nancy E. Mueller, S.D.	1997
David G. Bragg, M.D.	1998	Sharon B. Murphy, M.D.	1999
Joan Brugge, Ph.D.	1999	Allen I. Oliff, M.D.	1996
Mary Beryl Daly, M.D., Ph.D.	1998	F. G. Prendergrast, M.D., Ph.D.	1999
Lawrence H. Einhorn, M.D.	1996	Stuart L. Schreiber, Ph.D.	1999
Virginia L. Ernster, Ph.D.	1997	Joseph V. Simone, M.D.	1999
Eric R. Fearon, M.D.	1996	Louise C. Strong, M.D.	1999
Suzanne W. Fletcher, M.D.	1997	Peter K. Vogt, Ph.D.	1997
Robert E. Greenberg, M.D.	1996	Daniel D. VonHoff, M.D.	1998
David D. Ho, M.D.	1998	Barbara L. Weber, M.D.	1996
Waun Ki Hong, M.D.	1999	Alice S. Whittemore, Ph.D.	1998
Tyler Jacks, Ph.D.	1998	William C. Wood, M.D.	1996
Amy S. Langer, M.B.A.	1998	Robert C. Young, M.D.	1997
Caryn E. Lerman, Ph.D.	1997	Executive Secretary-Paulette Gray, Ph.D.	
Edison Tak-Bun Liu, M.D.	1999		
Gillies W. McKenna, M.D., Ph.D.	1998		

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## President's Cancer Panel

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**Harold Freeman, M.D.** 1997  
**Chairman**  
Director of Surgery  
Harlem Hospital Center  
New York, NY

**Frances M. Visco, Esq.** 1996  
President  
National Breast Cancer Coalition  
Philadelphia, Pa.

**Paul Calabresi, M.D.** 1998  
Professor and Chairman, Emeritus  
Department of Medicine  
Brown University  
Rhode Island Hospital

**Executive Secretary**  
**Maureen O. Wilson, Ph.D.**  
Assistant Director  
National Cancer Institute  
Building 31, Room 4A34  
Bethesda, MD 20892

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## Executive Committee Members

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**Dr. Richard Klausner**  
Director

**Dr. Alan Rabson**  
Deputy Director

**Dr. Martin Abeloff**  
Co-Chair, Board of Scientific Counselors

**Mr. Philip D. Amoruso**  
Associate Director for Extramural Management

**Dr. Faye Austin**  
Acting Director, and Deputy Director, Division of  
Cancer Biology; Chair, Extramural Advisory Council

**Ms. MaryAnn Guerra**  
Associate Director for Intramural Management

**Dr. Joseph Fraumeni**  
Director, Division of Cancer Epidemiology and  
Genetics

**Dr. Peter Greenwald**  
Director, Division of Cancer Prevention and Control

**Dr. Edward Harlow**  
Co-Chair, Board of Scientific Counselors

**Dr. Marvin A. Kalt**  
Director, Division of Extramural Activities

**Dr. Claude Klee**  
Chair, Intramural Advisory Council

**Dr. Alfred Knudson**  
Special Advisor, Division of Cancer Epidemiology and  
Genetics

**Dr. David Livingston**  
Chair, Board of Scientific Advisors

**Dr. Phillip Pizzo**  
Acting Director, Division of Clinical Sciences

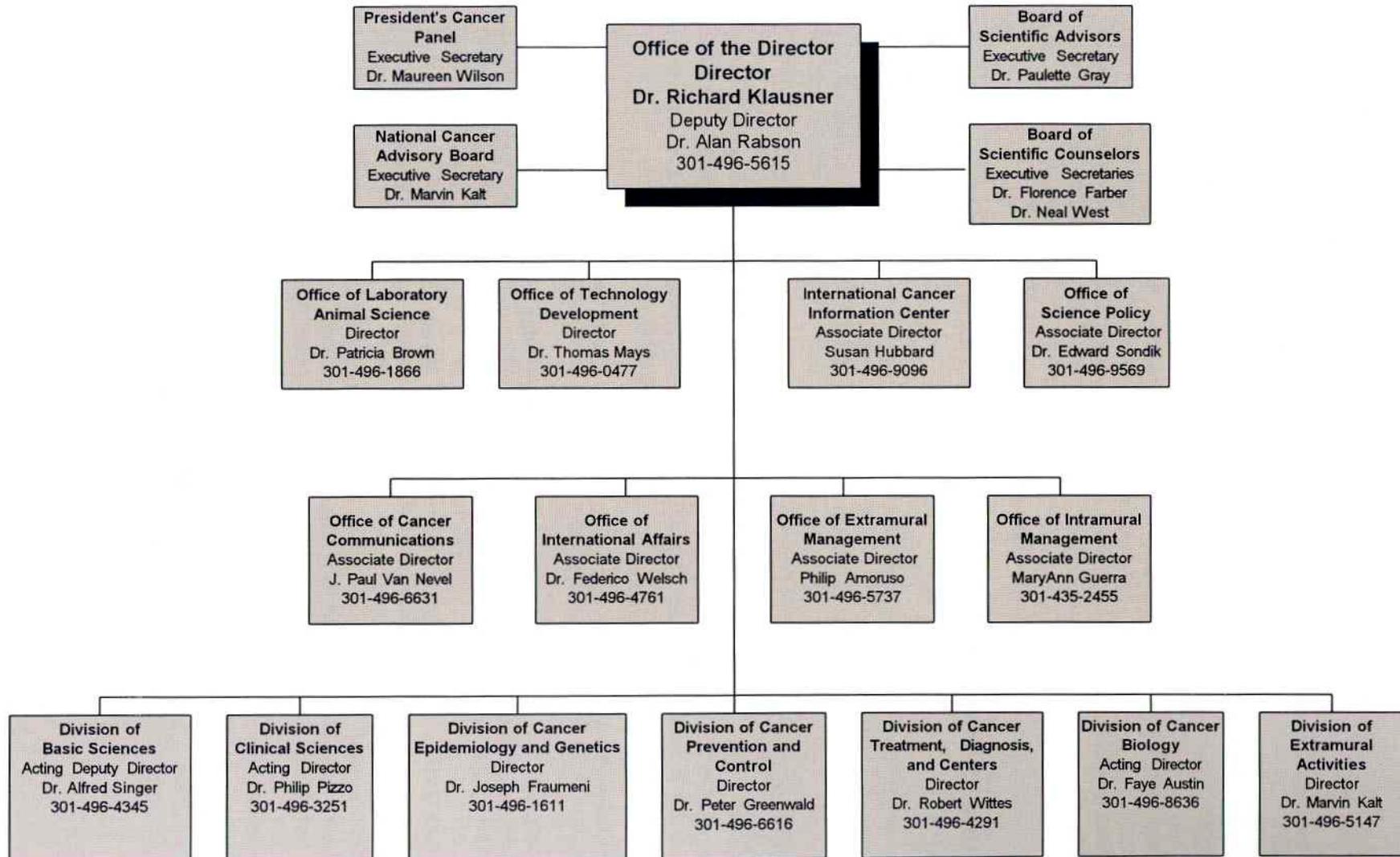
**Dr. Edward Sondik**  
Associate Director for Strategic Planning

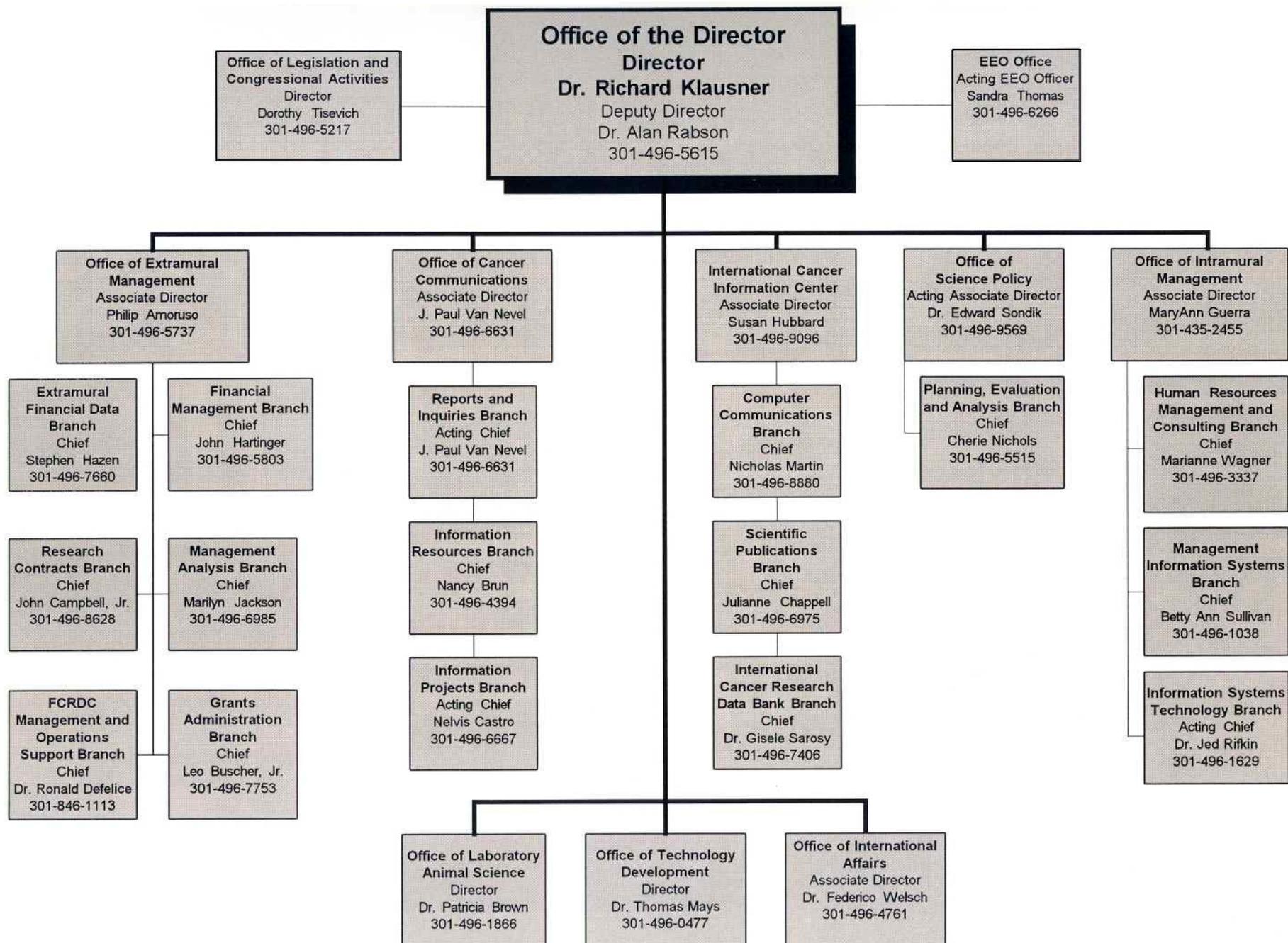
**Ms. Iris Schneider**  
Assistant Director, Office of Program Operations  
and Planning

**Dr. George Vande Woude**  
Special Advisor to the Director, Division of Basic Sciences

**Dr. Robert Wittes**  
Director, Division of Cancer Treatment,  
Diagnosis, and Centers

# National Cancer Institute

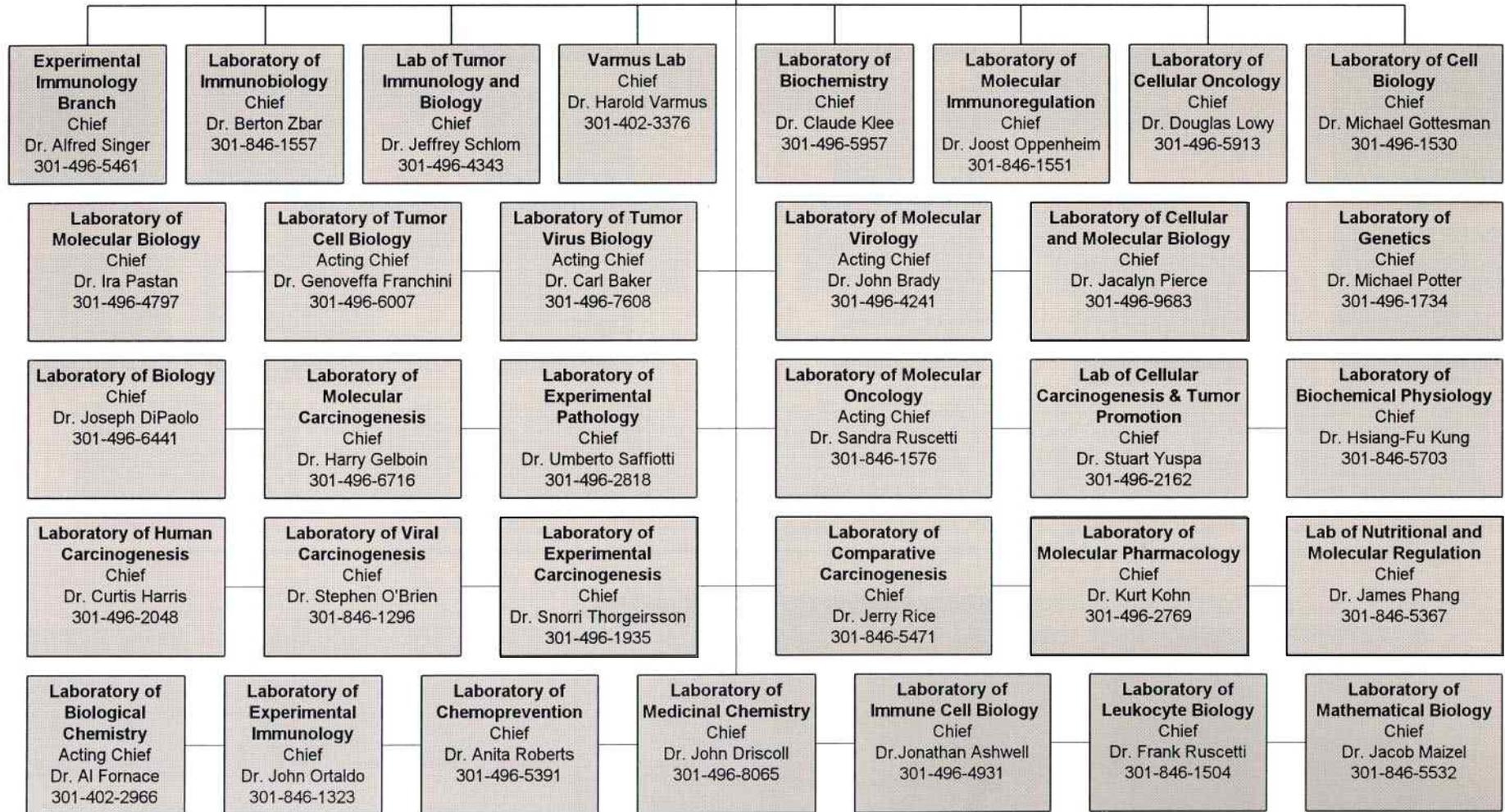


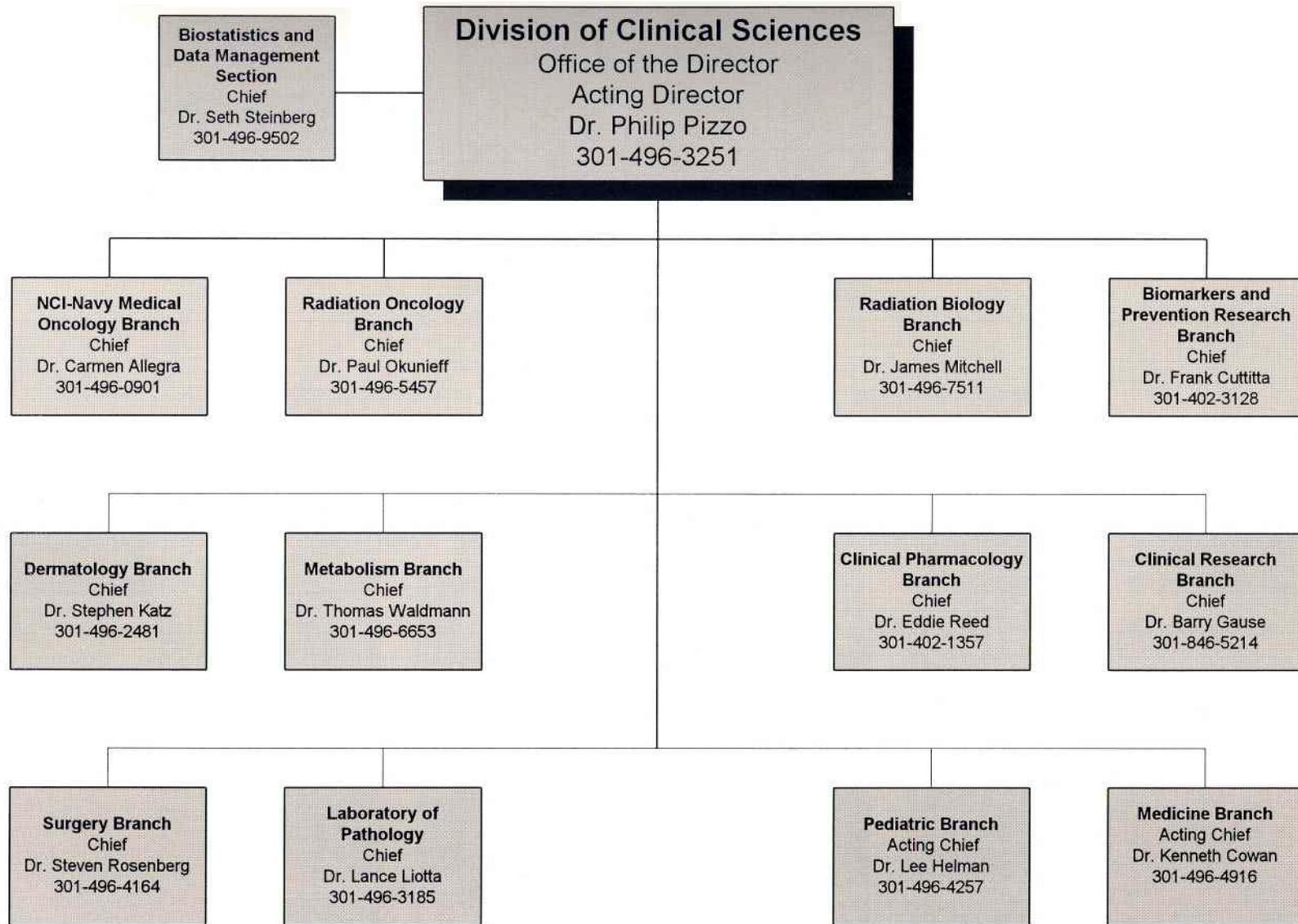


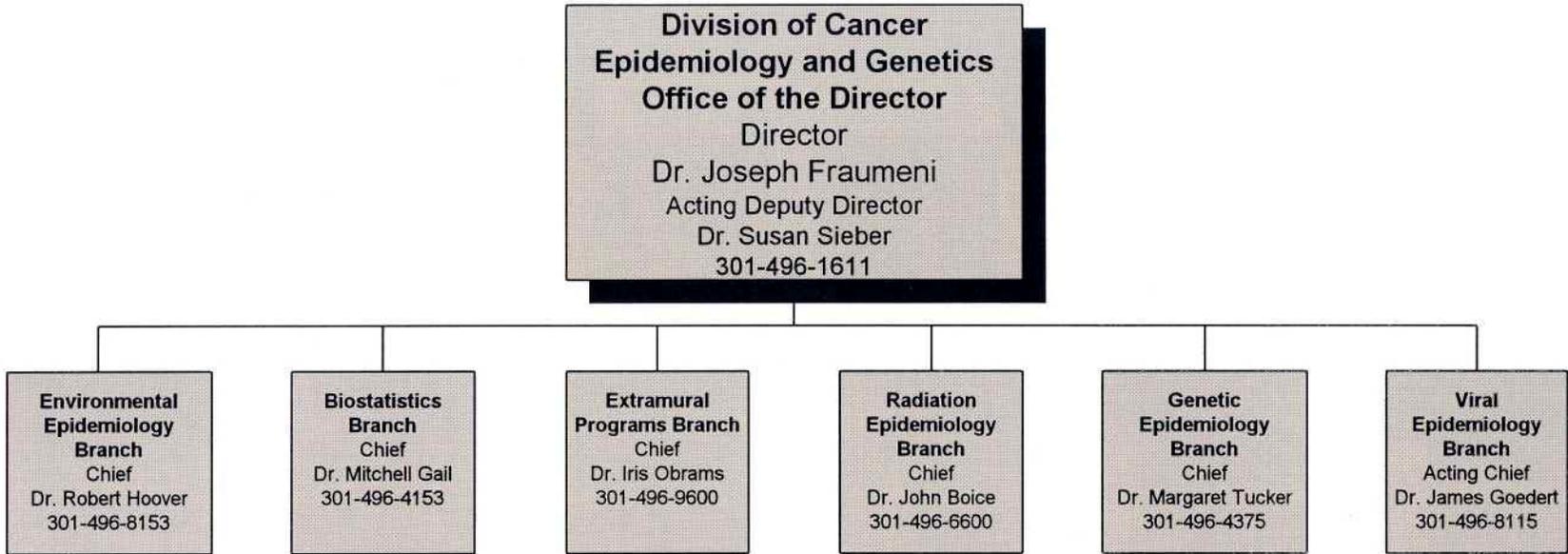
## Division of Basic Sciences

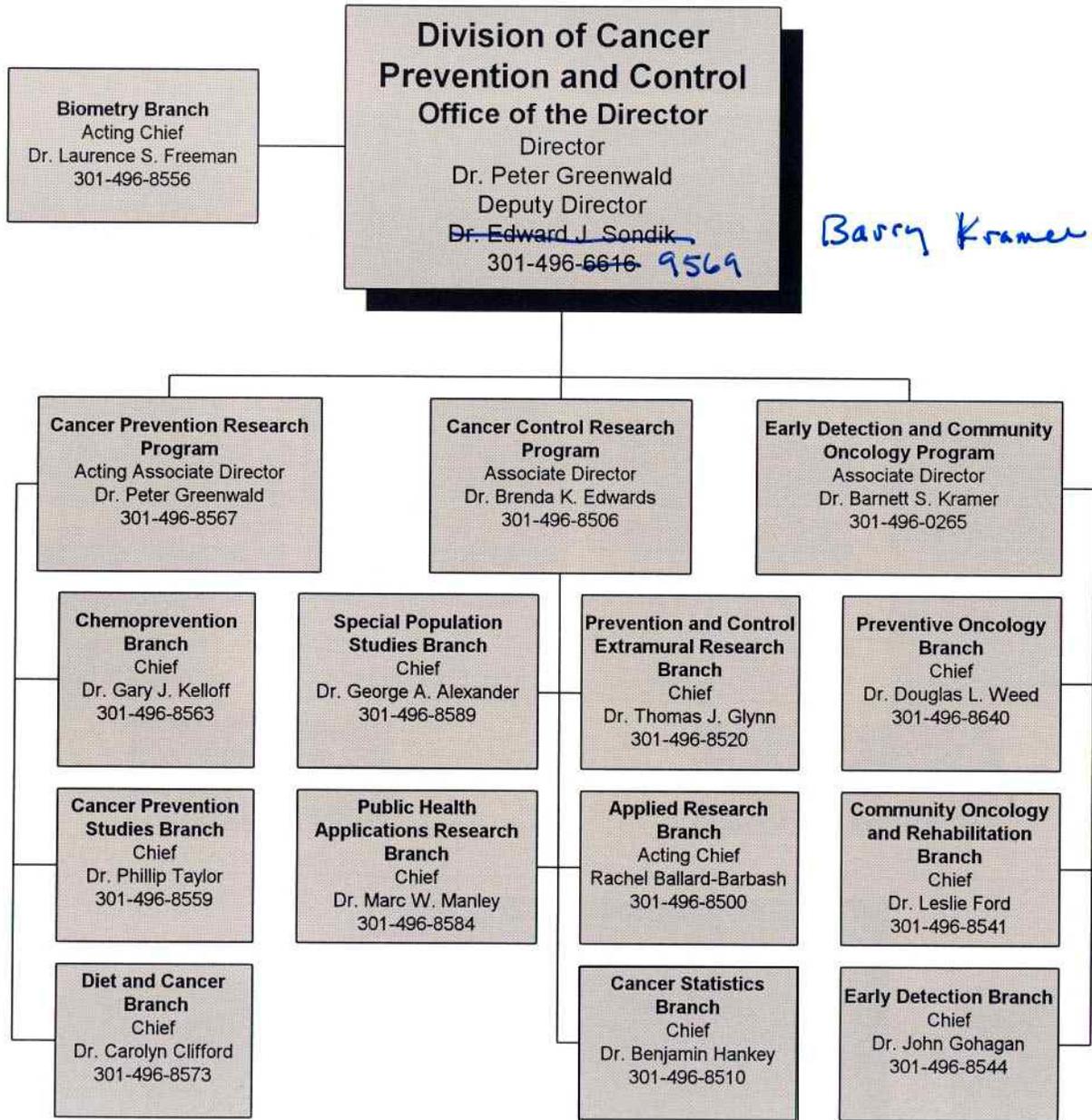
### Office of the Director

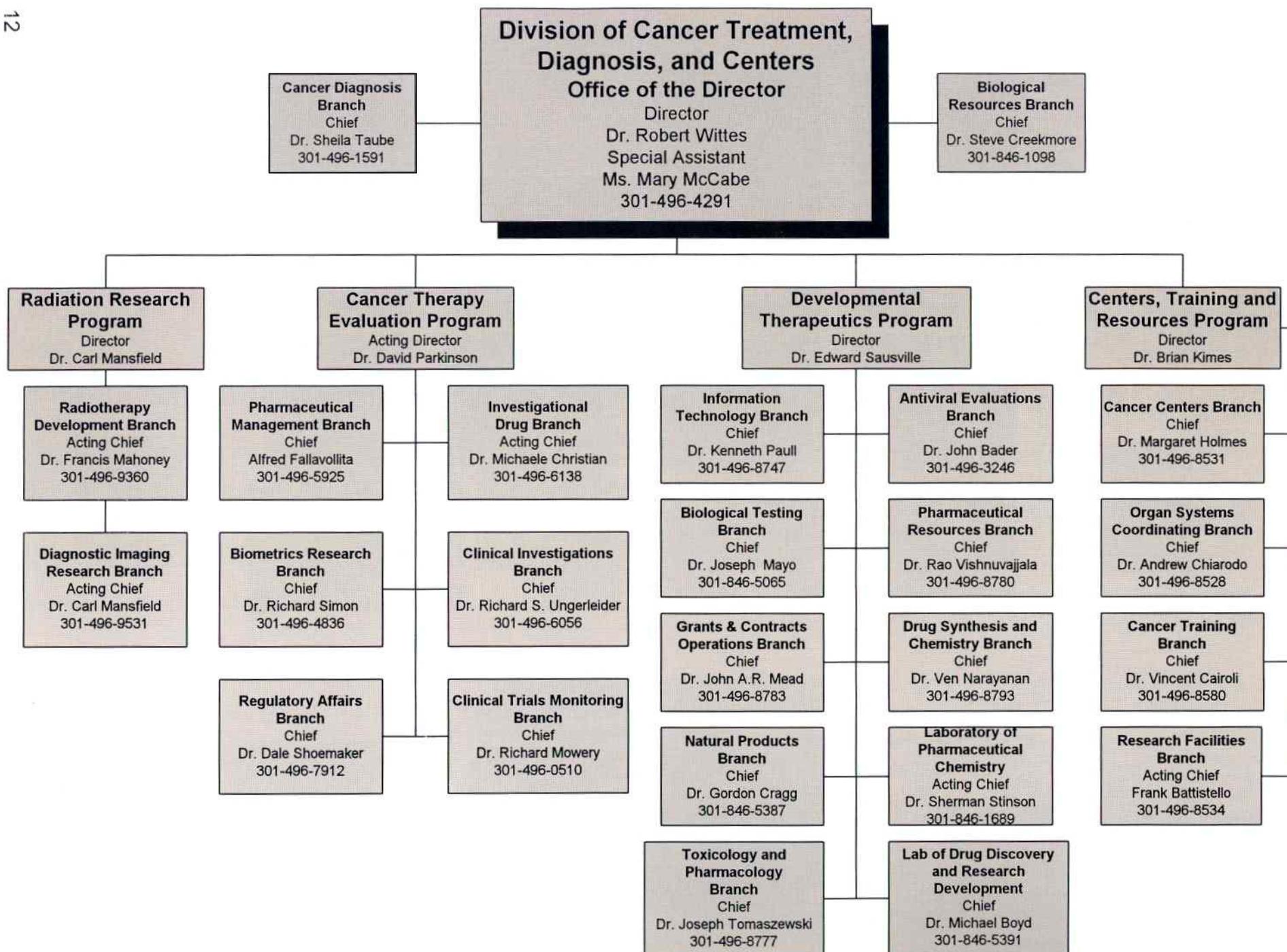
Acting Deputy Director  
Dr. Alfred Singer  
Special Assistant to the Director  
Dr. George VandeWoude  
301-496-4345











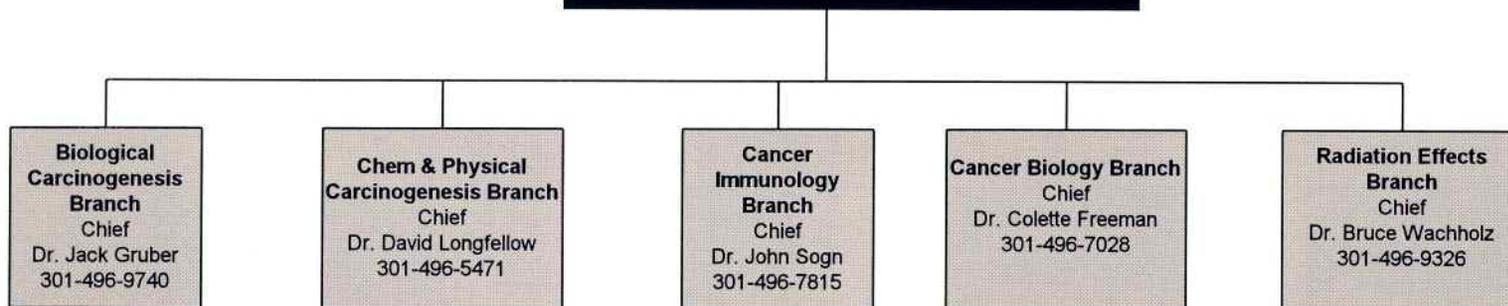
**Division of Cancer Biology**

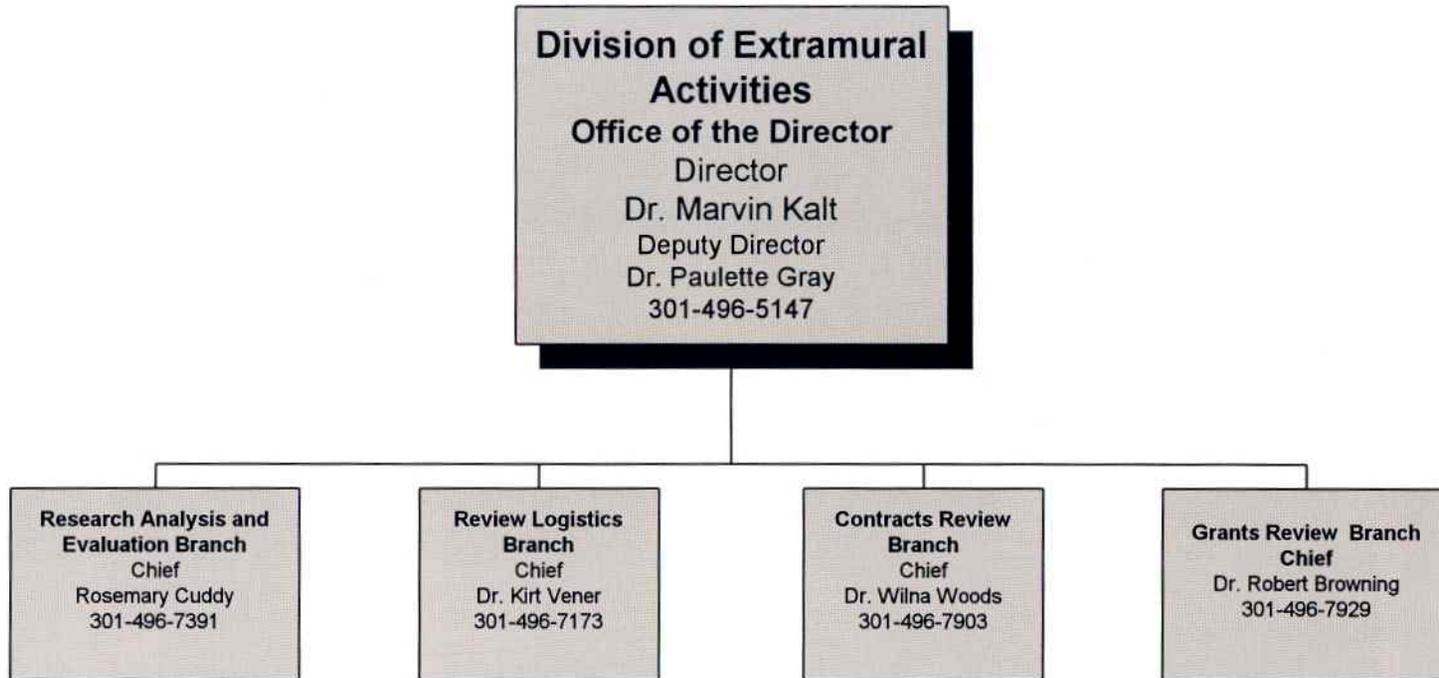
**Office of the Director**

Acting Director

Dr. Faye Austin

301-496-8636





# Research Positions at the National Cancer Institute<sup>1</sup>

The National Cancer Institute recognizes that one of the most valuable resources to be drawn upon in the fight against cancer is the wealth of scientific talent available in the U.S. and around the world. In an effort to attract and maintain the highest quality scientific staff, two personnel systems are used: the

U.S. Civil Service System and the PHS Commissioned Corps. In addition, the Staff Fellowship Program and the NIH Visiting Program have been designed to meet special needs. Other special programs are available for those who qualify.

Position	Eligibility	Annual Salary	Mechanism of Entry
<b>I. Civil Service</b>			
Civil Service (tenured)	Appropriate advanced education, experience and knowledge needed by NCI to conduct its programs.	Minimum starting Ph.D. - \$51,557 <sup>2</sup> (GS-13/1) Physicians - \$60,281 <sup>3</sup> (GS-13/8)	Office of Personnel Management; Contact Division Director of Laboratory Chief in area of interest or the NCI Personnel Office.
<b>II. Appointment of Special Experts</b>			
Appointment of Special Experts (non-tenured appointment which can be extended up to 4 years)	Applicants shall possess outstanding experience and ability as to justify recognition as authorities in their particular fields of activity.	Salary range is equivalent to GS-13/1 and with maximum limited to level IV of the Executive Schedule \$115,700.	Final approval rests with the Division Director or Deputy Director, NCI depending on recommended action.

<sup>1</sup> Does not necessarily indicate that positions are currently available at the National Cancer Institute.

<sup>2</sup> Includes a 1995 locality payment of 5.48% for the Washington Baltimore metro area.

<sup>3</sup> Medical Officer (Research), GS-602 Special Rate Scale for 1995.

Position	Eligibility	Annual Salary	Mechanism of Entry
<b>III. Clinical Associate Program</b>			
A. Clinical Associates	Initial appointment for 2 years with the possibility of 1-year extension. Graduate of accredited medical or osteopathic school and completion of internship. Completion of 2 or 3 years of clinical training beyond the M.D. degree. Must be a U.S. Citizen or a permanent U.S. resident. <b>NOTE:</b> Foreign M.D.'s on the J-1 visa may apply and will be considered under the V.A. program.	\$38,500 1st yr \$40,500 2nd yr \$42,500 3rd yr	Apply to NIH Office of Education Building 10 Room 1C-129
B. Special Associate Program (PRAT). Scientists committed to research careers in pharmacologic sciences.	Appointment for 2 years. Candidates must be U.S. citizens or permanent residents of the U.S. who have been awarded a doctoral degree. The degree must be in a biomedical or related science and must have been received within the 5 years preceding the date of application.	Salary Commensurate with other Postdoctoral opportunities at the NIH.	Apply to PRAT Program, NIGMS Natcher Building Room 2AS-43 A PRAT Factsheet is available from the PRAT Program Assistant at 301-594-3583 or fax 301-480- 2802 or Natcher Bldg. 45, Room 2AS.43D or e-mail PRAT@gm1. nigms.nih.gov

Position	Eligibility	Annual Salary	Mechanism of Entry
<b>IV. Visiting Program (limited tenure)</b>			
A. Visiting Fellow (Program time limitation- maximum 5 years)	5 years or less of relevant postdoctoral experience or training.	First year salaries range from \$25,000 to \$50,000 based on years of postdoctoral experience	Contact Division Director or Laboratory Chief in area of interest.
B. Visiting Associate (2 year initial appointment depending on visa restrictions)	3 years of postdoctoral experience or training with appropriate knowledge needed by NCI.	\$29,000 - (GS9/1) \$54,000 - (GS12/10)	Contact Division Director or Laboratory Chief in area of interest.
C. Visiting Scientist (2 year initial appointment depending on visa restrictions)	6 years of postdoctoral experience with appropriate specific experience and knowledge needed.	\$42,000 - (GS12/1) \$89,000 - (GS15/10)	Contact Division Director or Laboratory Chief in area of interest.

*Under most circumstances, the various visiting programs are limited to non-citizens.*

Position	Eligibility	Annual Salary	Mechanism of Entry
<b>V. Staff Fellowships</b>			
A. Staff Fellowship	Physician or other doctoral degree equivalent who has less than 3 years of relevant professional level postdoctoral research experience. U.S. citizen or resident alien. Typical appointments are made for two years.	Medical Officer (Research), GS-602 special salary rate scale for 1995. Physicians \$28,000-\$49,154 (Maximum GS11/8) Other Doctors \$28,000-\$47,954 (Maximum GS12/6)	Contact Division Director or Laboratory Chief in area of interest or the NCI Personnel Office.
B. Senior Staff Fellowship	Physician or other doctoral degree equivalent who has 3 to 7 years of relevant professional level postdoctoral research experience. U.S. citizen or resident alien. Typical appointments are made for two years.	Physicians \$39,000 - \$74,942 (Maximum GS13/10) Other Doctors \$33,504 - \$63,539 (Maximum GS13/10)	Contact Division Director or Laboratory Chief in area of interest or the NCI Personnel Office.

Position	Eligibility	Annual Salary	Mechanism of Entry
<b>VI. Special Programs</b>			
A. Guest Researcher-organization other than NIH, PHS	Usually a scientist, engineer, student or other scientifically trained specialist who would benefit from the use of NCI facilities in furthering his or her research. Cannot perform services for NCI.	Established by sponsoring organization.	Contact Division Director or Laboratory Chief in area of interest.
B. Commissioned Officer Student Training and Extern Program (COSTEP) Program (operates year-round). Maximum 120 days per 12-month period.	U.S. citizen. Must have completed one year of study in a medical, dental, podiatry, optometry or veterinary school or a minimum of two years of baccalaureate program in a health related field such as engineering, nursing, pharmacy, etc. May be enrolled in a master's or doctoral program in a health related field (designated by the Assistant Secretary for Health). Physical requirements of PHS Commissioned Corps. Plans to return to college.	Receive the basic pay quarters (if appropriate), and subsistence allowance of a Junior Assistant Health Service Officer (pay grade 0-1).	Apply to Director, Division of Commissioned Personnel Attention: COSTEP Coordinator Room 4-35, Parklawn Building, 5600 Fishers Lane, Rockville, MD. 20857.
C. Fogarty International Scholars in Residence Program.	International reputation, productivity, demonstrated ability in biomedical field.	\$90,000 for 1 year.	Nominations are submitted to Fogarty Center by Institute Director, any senior tenured member of the NIH scientific staff, or former scholar.

Position	Eligibility	Annual Salary	Mechanism of Entry
D. Student Temporary Employment Program	Provides employment opportunities for individuals who are enrolled or accepted for enrollment as a degree seeking student and is taking at least a half-time academic/vocational or technical course load in an accredited high school, 2 year or 4 year college or university, graduate or professional school. The individual must be in good academic standing and must be at least 16 years of age. Noncitizens may compete provided they are from a country allied with the United States.	Salary is commensurate with duties assigned and student's education and/or experience.	Apply to NCI Personal Office, EPS, Room 537, 6120 Executive Blvd., Rockville, MD 20892-7209. No deadline required for applying.
E. Special Volunteer Program	Volunteer service may be accepted for direct patient care, clerical assignments, technical assistance, or any other activities necessary to carry out the authorized functions of the NCI, without compensation. If under 18 volunteers must have a work permit which must be obtained prior to assignment.	N/A	Contact Division Director or Laboratory Chief in area of interest.

Position	Eligibility	Annual Salary	Mechanism of Entry
F. Student Career Experience Program	<p>Provides experience that is directly related to the student educational program and career goals. Must be 16 years of age or older, enrolled or accepted for enrollment as a degree seeking student in an accredited high school, technical or vocational school, 2 year or 4 year college or university, graduate, or professional school and be in good academic standing. School must participate in the CO-OP program. Must be enrolled in a field of study related to the assigned work with at least half-time academic/vocational or technical course load. U.S. citizen or national (resident of American Samoa or Swains Island) or noncitizen lawfully admitted to the U.S. as a permanent resident who will be able to meet citizenship requirements prior to conversion, and is a national of a country allied with the U.S.</p>	<p>Salary is commensurate with duties assigned and student's education and/or experience.</p>	<p>Contact NCI Personal Office, EPS, Room 537, 6120 Executive Blvd., Rockville, MD 20892-7209.</p>

Position	Eligibility	Annual Salary	Mechanism of Entry
<b>VII. Other Training Programs</b>			
A. Cancer Prevention Fellowship Program	<p>Must be an M.D., D.D.S., D.O., Ph.D., or other doctoral degree in a related discipline (epidemiology, biostatistics, and the biomedical, nutritional, public health, or behavioral sciences). Must be a U.S. citizen or resident alien eligible for citizenship within four years.</p>	<p>First year for an M.D., D.D.S., or D.O. \$30,000 - \$41,000 for Ph.D. \$22,000 - \$35,000.</p>	<p>Apply to Program Director, CPFP, Executive Plaza South, Room T41, MSC 7105, 6120 Executive Blvd., Rockville, MD 20892-7209. Bethesda, Maryland, 20892.</p>
B. Biotechnology Training Program	<p>Physicians with little or no experience or training in fundamental research, but with an interest in biotechnology including its application to prevention and new treatment and diagnostic techniques, would be eligible. Ph.D. scientists with little or no experience or training in clinically related programs but with an interest in clinical applications of fundamental research methodology related to biotechnology would also be eligible. Typically, these candidates will have less than three years postdoctoral experience. The Biotechnology Training Program is established for United States citizens, or resident aliens who will be eligible for U.S. citizenship within four years.</p>	<p>First year Ph.D. \$25,000 - \$38,000 Physicians \$37,000 - \$50,500</p>	<p>Contact Division Director or Laboratory Chief in area of interest.</p>

Position	Eligibility	Annual Salary	Mechanism of Entry
C. Cancer Nurse Training Program	Applications will be accepted from Graduates of NLN accredited baccalaureate nursing programs. Each candidate must submit academic transcripts demonstrating a minimum of a "B" average in undergraduate work, three references regarding their academic work and clinical capability, a letter describing their interest in the program, and a Personal Qualification Statement, SF-171.	Stipends for the program will be \$2,652 per month.	Contact the Division of Clinical Sciences.
D. Student Research Training Program	The review and selection of candidates, as well as the day-to-day administration of the fellowships, will be the responsibility of each Administrative Resource Center. Applicants must be bona fide high school, college, graduate or medical school students be 16 years of age, have a cumulative GPA of 2.75 or above, be either a U.S. citizen or resident alien. The length of the training fellowships may vary from 2 to 6 months, not to exceed 6 months during one 12-month period.	Stipends are based on education and experience at a pay range of \$802 - \$1,872 per month.	Contact Division Director or Laboratory Chief in area of interest. Application deadlines are March 1 for spring/summer months and October 1 for fall/winter months.

Position	Eligibility	Annual Salary	Mechanism of Entry
E. Cancer Epidemiology and Biostatistics Training Program	M.Ds and Ph.Ds with an interest in and an aptitude for epidemiology and/or biostatistical research in cancer. Ph.D. candidates in approved doctoral programs in epidemiology or biostatistics whose research would be the source of their dissertation. Master's level scientists whose degree is in a discipline related to epidemiology or biostatistics. Must be U.S. citizen or resident alien who will be eligible for U.S. citizenship within four years.	First year for M.D. and Ph.D. Mathematical Statisticians \$31,000 - \$42,000 for other Ph.D. \$23,000-\$36,000 for Master's level \$16,000 - \$20,000	Contact the Administrative Resource Center of the Division of Cancer Epidemiology and Genetics.
F. Intramural Research Training Award (IRTA)	<b>(1) Postdoctoral:</b> Appointments of 1 or 2 years with a maximum of 5 years to candidates with physician or other doctoral degree in the biomedical, behavioral or related sciences.	First year salaries range from \$25,000 - \$50,000 based on years of experience.	Contact Division Director or Laboratory Chief in area of interest.
	<b>(2) Predoctoral:</b> Fellowships are granted to students enrolled in PhD, MD, DDS, DMD, DVM, or equivalent degree programs. Students will have completed their graduate course work and will engage full-time in a laboratory research program.	Based on years of post-baccalaureate education ranging from \$16,000 - \$21,000.	Contact Division Director or Laboratory Chief in area of interest.

Position	Eligibility	Annual Salary	Mechanism of Entry
G. Technology Transfer Fellowship Program	Physicians, PhDs, JDs, individuals with a master's degree in health communications, biomedical science, behavioral science, computer science, informatics, library science, health education, marketing, journalism, English, a graduate degree in law, or a graduate degree in another discipline with legal/paralegal expertise, with little or no experience or training in technology transfer or communications research but with an interest in these areas.	Based on years of (1) postdoctoral experience starting at \$25,000 - \$38,000 or (2) post-Master's degree starting at \$22,000 - \$34,000.	Contact following program in area of interest: International Cancer Information Center, the Office of Cancer Communications, the Division of Cancer Prevention and Control, the Office of Technology Development, or the Planning, Evaluation, and Analysis Branch.



## Number of Deaths for the Five Leading Cancer Sites by Age Group and Sex

All Ages		Under 15		15-34		35-54		55-74		75+	
Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Lung	Lung	Leukemia	Leukemia	Leukemia	Breast	Lung	Breast	Lung	Lung	Lung	Lung
91,318	54,483	375	257	676	615	8,867	9,239	54,931	31,369	27,368	17,496
Prostate	Breast	Brain & CNS	Brain & CNS	Non-Hodgkin's Lymphoma	Leukemia	Colon & Rectum	Lung	Colon & Rectum	Breast	Prostate	Colon & Rectum
34,238	43,063	218	218	524	460	2,461	5,482	13,749	19,395	21,486	15,858
Colon & Rectum	Colon & Rectum	Endocrine	Endocrine	Brain & CNS	Cervix	Non-Hodgkin's Lymphoma	Colon & Rectum	Prostate	Colon & Rectum	Colon & Rectum	Breast
28,275	28,714	96	80	454	347	1,740	2,032	12,407	10,675	11,879	13,811
Pancreas	Pancreas	Soft Tissue	Bone	Hodgkin's	Brain & CNS	Brain & CNS	Ovary	Pancreas	Ovary	Pancreas	Pancreas
12,672	13,390	52	35	232	301	1,550	1,817	6,904	6,561	4,390	6,767
Leukemia	Ovary	Non-Hodgkin's Lymphoma	Soft Tissue	Soft Tissue	Non-Hodgkin's Lymphoma	Pancreas	Cervix	Non-Hodgkin's Lymphoma	Pancreas	Leukemia	Ovary
10,705	13,181	50	32	215	217	1,330	1,629	4,649	5,763	3,999	4,676

Source: Mortality tape (1992) from National Center for Health Statistics.

## Relationship of Cancer to the Leading Causes of Death in the United States

Rank	Cause	Number of Deaths	Crude Death Rate per 100,000 Population	Percent of Total Deaths
	<b>All Causes</b>	<b>2,175,139</b>	<b>852.7</b>	<b>100.0%</b>
1	Heart Disease	717,618	281.3	33.0
2	CANCER	520,548	204.1	23.9
3	Cerebrovascular	143,756	56.4	6.6
4	Emphysema, Bronchitis & Asthma	91,930	36.0	4.2
5	Accidents	86,659	34.0	4.0
6	Pneumonia & Influenza	75,712	29.7	3.5
7	Diabetes	50,065	19.6	2.3
8	Human Immunodeficiency Virus Infection	33,553	13.2	1.5
9	Suicide	30,471	11.9	1.4
10	Homicide	25,434	10.0	1.2
11	Cirrhosis of the Liver	25,257	9.9	1.2
12	Nephritis & Nephrosis	22,158	8.7	1.0
13	Septicaem	20,989	8.2	1.0
14	Atherosclerosis	16,829	6.6	0.8
15	Aortic Aneur	16,219	6.4	0.7
	Other and Ill-Defined	297,941	116.8	13.7

Source: Mortality Tape (1992) from National Center for Health Statistics.

**Estimated New Cancer  
Cases and Deaths  
by Sex for All Sites  
1995**

Primary Site	Estimated New Cases			Estimated Deaths		
	Total	Male	Female	Total	Male	Female
All Sites	1,252,000	677,800	575,000	547,000	289,000	258,000
Oral Cavity and Pharynx	28,150	18,800	9,350	8,370	5,480	2,890
Lip	2,500	1,900	600	100	80	20
Tongue	5,550	3,600	1,950	1,870	1,200	670
Mouth	11,000	6,900	4,100	2,300	1,300	1,000
Pharynx	9,100	6,400	2,700	4,100	2,900	1,200
Digestive System	223,000	118,000	105,000	124,330	66,130	58,200
Esophagus	12,100	8,800	3,300	10,900	8,200	2,700
Stomach	22,800	14,000	8,800	14,700	8,800	5,900
Small Intestine	4,600	2,400	2,200	1,120	590	530
Colon	100,000	49,000	51,000	47,500	23,000	24,500
Rectum	38,200	21,700	16,500	7,800	4,200	3,600
Liver and Intrahepatic Bile Duct	18,500	9,800	8,700	14,200	7,700	6,500
Pancreas	24,000	11,000	13,000	27,000	13,200	13,800
Other Digestive	2,800	1,300	1,500	1,110	440	670
Respiratory System	186,300	108,400	77,900	162,950	99,470	63,480
Larynx	11,600	9,000	2,600	4,090	3,200	890
Lung and Bronchus	169,900	96,000	73,900	157,400	95,400	62,000
Other Respiratory	4,800	3,400	1,400	1,460	870	590
Bones and Joints	2,070	1,100	970	1,280	750	530
Soft Tissues	6,000	3,300	2,700	3,600	1,800	1,800
Melanomas Of Skin	34,100	18,700	15,400	7,200	4,500	2,700
Breast	183,400	1,400	182,000	46,240	240	46,000
Genital Organs	333,100	252,200	80,900	67,380	40,980	26,400
Cervix Uteri	15,800		15,800	4,800		4,800
Corpus and Uterus, NOS	32,800		32,800	5,900		5,900
Ovary	26,600		26,600	14,500		14,500
Other Female Genital	5,700		5,700	1,200		1,200
Prostate	244,000	244,000		40,400	40,400	
Testis	7,100	7,100		370	370	
Other Male Genital	1,100	1,100		210	210	
Urinary System	79,300	54,400	24,900	22,900	14,600	8,300
Urinary Bladder	50,500	37,300	13,200	11,200	7,500	3,700
Kidney and Other Urinary	28,800	17,100	11,700	11,700	7,100	4,600
Eye and Orbit	1,870	1,000	870	240	130	110
Brain and Other Nervous System	17,200	9,700	7,500	13,300	7,300	6,000
Endocrine Glands	15,380	3,900	11,480	1,780	760	1,020
Thyroid	13,900	3,200	10,700	1,120	440	680
Other Endocrine	1,480	700	780	660	320	340
Lymphomas and Myelomas	71,200	41,100	30,100	34,450	18,120	16,330
Hodgkin's Disease	7,800	4,500	3,300	1,450	820	630
Non-Hodgkin's Lymphoma	50,900	29,500	21,400	22,700	12,000	10,700
Multiple Myeloma	12,500	7,100	5,400	10,300	5,300	5,000
Leukemias	25,700	14,700	11,000	20,400	11,100	9,300
Lymphocytic Leukemias	11,000	6,700	4,300	6,400	3,500	2,900
Myeloid Leukemias	11,100	5,900	5,200	8,400	4,600	3,800
Other Leukemias	3,600	2,100	1,500	5,600	3,000	2,600
All Other Sites	45,230	30,300	14,930	32,580	17,640	14,940

Source: Wingo PA, Tong T, Bolden S. Cancer Statistics 1995. CA Cancer J. Clin 1995; 45:8-30. Excludes basal and squamous cell skin and in situ carcinomas except urinary bladder. Incidence projections are base on rates from the NCI SEER Program 1989-91.

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## The Cost of Cancer

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The direct cost of cancer is derived from the figures for care of patients. It does not include the cost of the productivity lost while individuals are away from their work due to treatment of disability or the value of lost productivity due to premature death. Figures for the direct cost of cancer and for all health care for 1990 are as follow:

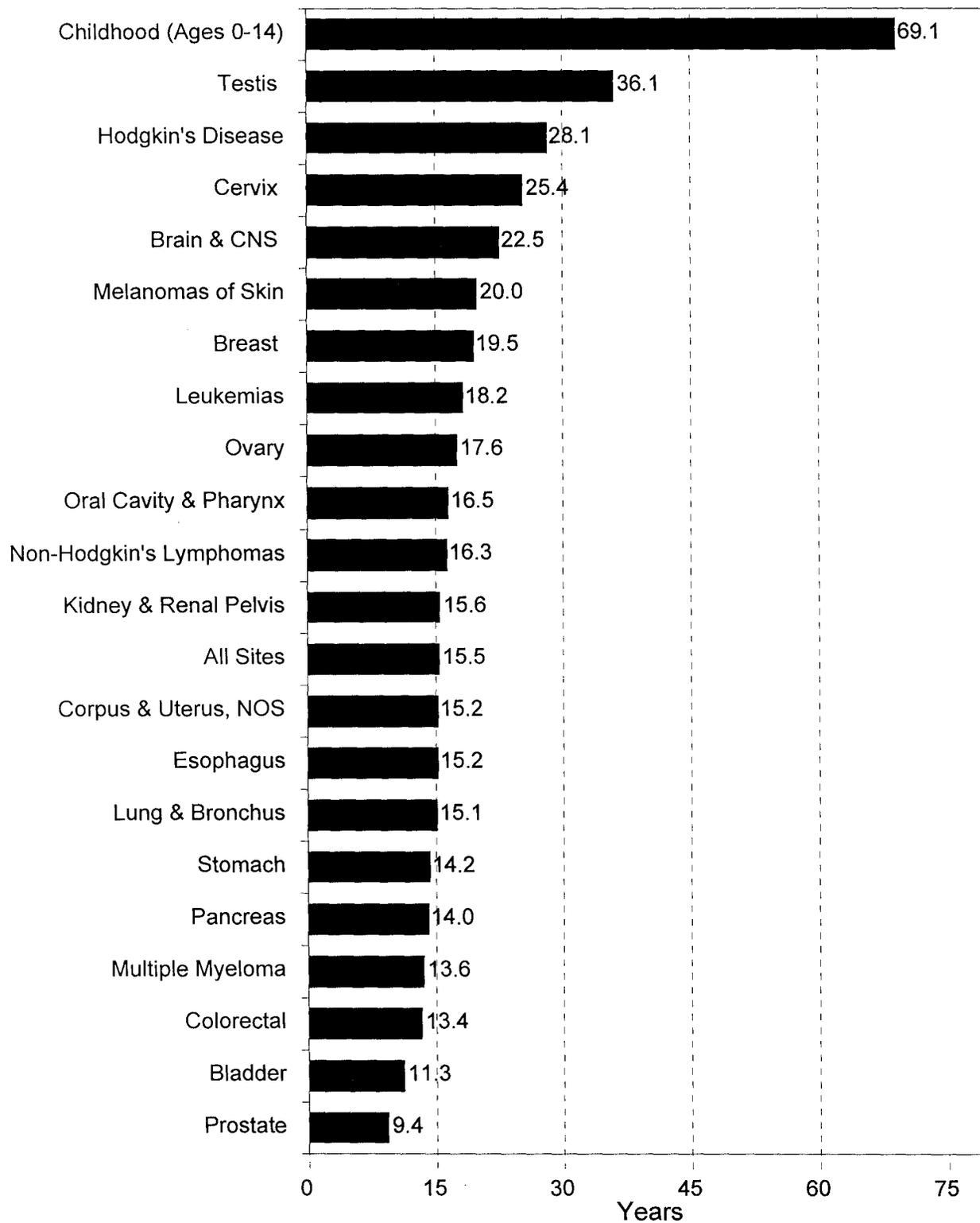
(in Millions)	
<u>All Costs</u>	<u>Direct Cost</u>
All Cancers	\$ 35,256
All Health Care	\$585,300
Percent Relationship of Cancer to Total	6%

Sources:

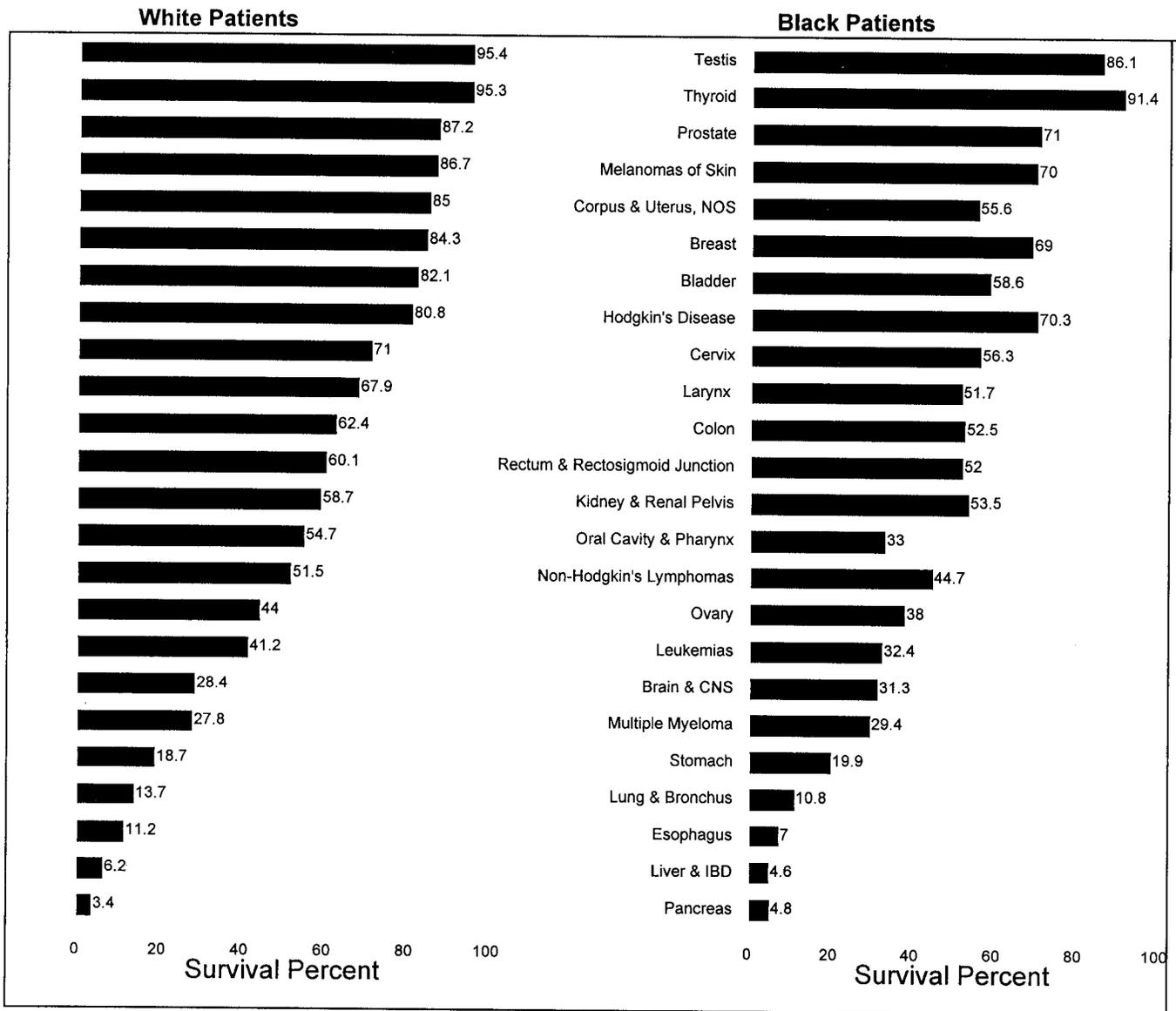
Brown, M.L. The National Economic Burden of Cancer: An Update. *Journal of the National Cancer Institute*, 1990, 82:1881-1814.

Office of the Actuary, Health Care Financing Administration.

**Average Years of Life Lost  
Per Person Dying of Cancer  
All Races, Both Sexes, 1992**

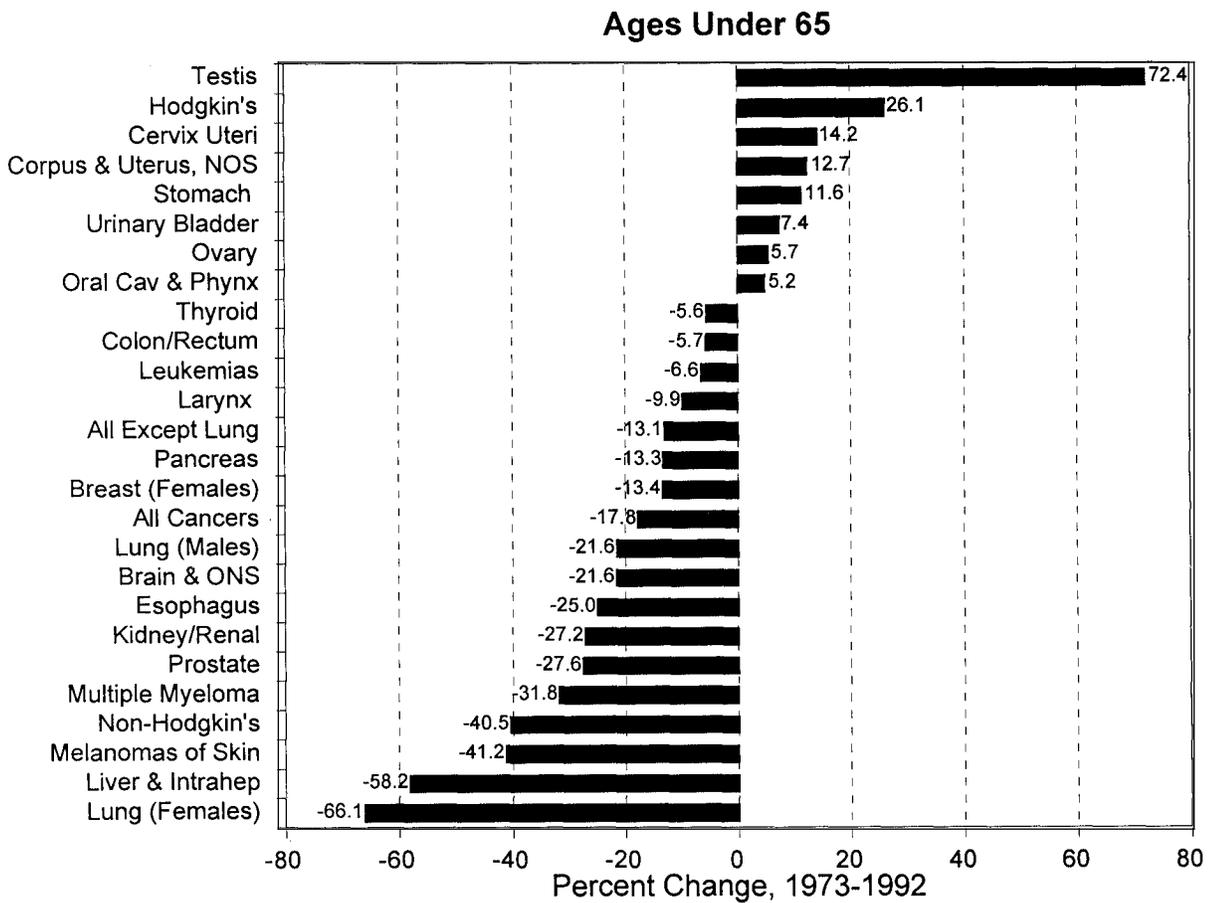


**5 Year Relative  
Survival Rates, by Site  
White and Black Patients  
1986 to 1991**



Data From SEER Program  
1986-1991  
Males and Females

**Cancer Mortality Rates  
Changes from 1973 to 1992  
(Ages Under 65)**

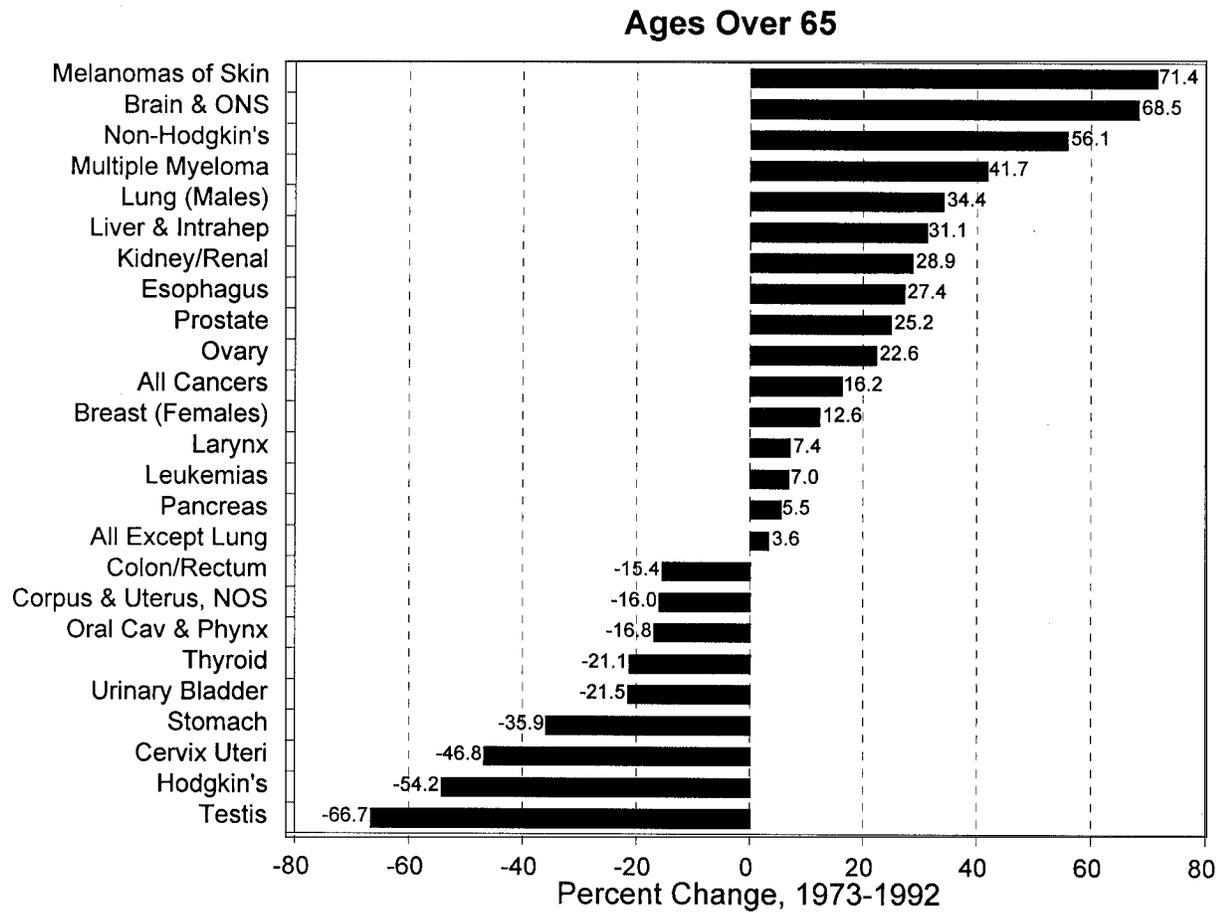


**Note:**

**Progress and problems:**

*This graph illustrates percent changes in the annual death rate for a wide range of cancers. Cancers to the right of the zero axis have had increased cancer mortality rates, those to the left have had decreased mortality rates. If the graph is turned counter-clockwise, on its side, the bars pointing down show the major tumors in which a significant reduction in annual death rate has occurred. Progress is apparent: a reduction has occurred in the annual death rates since 1973 in both common and uncommon cancers. This definitely shows progress in the age group under 65, albeit more progress needs to be made.*

**Cancer Mortality Rates**  
**Changes from 1973 to 1992**  
**(Ages Over 65)**



**Note:**

**Progress and problems:**

*Comparing this chart to that for individuals under 65, it is clear that not as much progress is being made in reducing cancer death rates in older groups. The cancer deaths to the right of the zero axis have risen, those to the left have decreased. This graph should be compared to the accompanying graph addressing changes in mortality rates for people under age 65. Issues such as low-income, patterns of medical care, and other related factors are thought to be important considerations in the older population.*

**Cancer Mortality Rates**  
**United States, 1987-1992**

Cancer Site	Mortality Rate per 100,000		Ratio Blacks/Whites
	Blacks	Whites	
All Sites	227.0	169.0	1.3
Males	317.5	212.8	1.5
Females	168.2	140.0	1.2
Esophagus	8.3	3.0	2.8
Cervix uteri	6.7	2.5	2.7
Larynx	2.8	1.2	2.3
Prostate	53.5	24.0	2.2
Multiple Myeloma	5.9	2.7	2.2
Stomach	8.9	4.2	2.1
Oral Cavity & Pharynx	5.2	2.7	1.9
Corpus & Uterus, NOS	6.0	3.2	1.9
Liver & Intrahep	4.3	2.6	1.7
Pancreas	12.1	8.1	1.5
Thyroid	0.4	0.3	1.3
Colon & Rectum	23.4	18.4	1.3
Lung & Bronchus	61.6	49.0	1.3
Males	105.3	72.5	1.5
Females	31.5	31.8	1.0
Breast (females)	31.3	27.0	1.2
<50 years	9.1	5.8	1.6
>50 years	100.0	92.5	1.1
Urinary Bladder	3.3	3.3	1.0
Kidney & Renal Pelvis	3.4	3.5	1.0
Leukemias	6.0	6.4	0.9
Hodgkin's Disease	0.5	0.6	0.8
Ovary	6.6	8.0	0.8
Non-Hodgkin's Lymphomas	4.5	6.5	0.7
Brain & Other Nervous	2.5	4.5	0.6
Testis	0.1	0.3	0.3
Melanomas of Skin	0.4	2.5	0.2
All Sites Except Lung & Bronchus	165.4	120.0	1.4
Males	212.2	140.3	1.5
Females	136.7	108.1	1.3

NOTE: The annual number of cancer deaths per 100,000 persons is derived from estimates of the National Center for Health Statistics, adjusted to the 1970 US population age distribution.

## Cancer Incidence Rates

### United States, 1987-1992

Cancer Site	Incidence Rates per 100,000		Ratio
	Blacks	Whites	Blacks/Whites
All Sites	436.5	402.9	1.1
Males	584.5	484.2	1.2
Females	337.3	351.4	1.0
Esophagus	9.8	3.4	2.9
Multiple Myeloma	9.2	4.1	2.2
Liver & Intrahep	4.8	2.5	1.9
Stomach	12.3	6.6	1.9
Cervix Uteri	13.4	8.0	1.7
Larynx	7.2	4.4	1.6
Pancreas	13.5	8.8	1.5
Lung & Bronchus	79.2	58.4	1.4
Males	124.3	80.2	1.5
Females	46.8	42.5	1.1
Prostate	187.6	139.4	1.3
Oral Cavity & Pharynx	13.9	10.4	1.3
Colon & Rectum	52.5	47.4	1.1
Colon	40.6	33.9	1.2
Rectum	12.0	13.6	0.9
Kidney & Renal Pelvis	9.6	9.0	1.1
Breast (females)	96.9	113.2	0.9
<50 years	33.8	32.9	1.0
>50 years	291.4	360.6	0.8
Leukemias	8.8	10.5	0.8
Hodgkin's Disease	2.3	3.1	0.7
Non-Hodgkin's Lymphomas	10.8	15.5	0.7
Corpus & Uterus, NOS	14.8	22.3	0.7
Ovary	10.4	15.9	0.7
Thyroid	2.7	4.7	0.6
Brain & Other Nervous	3.8	6.8	0.6
Urinary bladder	9.5	18.2	0.5
Testis	0.7	5.2	0.1
Melanomas of Skin	0.8	13.1	0.1
All Sites Except Lung & Bronchus	357.3	344.5	1.0
Males	460.2	403.9	1.1
Females	290.6	308.9	0.9

NOTE: The annual number of new cancer cases per 100,000 persons is derived from NCI's SEER Program, adjusted to the 1970 US population age distribution.

**The Prevalence of Cancer:  
Estimated Number of Persons  
Diagnosed With Cancer  
United States, 1995**

	1995 Estimated Prevalence		
	Total	Males	Females
<b>ALL SITES</b>	7,375,139	2,887,524	4,487,615
Buccal	195,687	120,891	74,796
Stomach	69,470	40,008	29,462
Colon	911,886	416,489	495,397
Rectum	347,191	176,464	170,727
Pancreas	24,755	10,543	14,212
Larynx	138,475	110,755	27,720
Lung	393,825	217,514	176,311
Melanoma	406,275	192,690	213,585
Bladder	558,265	396,688	161,577
Kidney	163,047	100,521	62,526
Brain	84,181	43,338	40,843
Hodgkins	140,721	75,246	65,475
Non Hodgkins	270,831	134,576	136,255
Leukemia	127,864	66,475	61,389
Thyroid	187,047	45,297	141,750
Prostate	582,543	582,543	
Testis	113,382	113,382	
Breast	1,769,241		1,769,241
Cervix	183,837		183,837
Corpus	495,683		495,683
Ovary	174,495		174,495

*NOTE: Previous published prevalence national estimates of cancer have been revised using age-specific cancer rates. There has been no decline in prevalence-the number of cancer survivors has increased during recent years.*



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**Fiscal Year  
1995 Budget**

*(Dollars in Thousands)*

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**A. Actual Obligations Resulting From Appropriated Funds:**

FY 1995 Appropriation	\$2,135,119
Real transfer to other NIH Institutes through the NIH Directors one-percent transfer authority	-1,636
Rescission in accordance with P.L. 103-211	-3,870
Lapse	-244
<b>Actual Obligations Subtotal</b>	<b>2,129,369</b>
Comparative transfer to the Office of AIDS Research, NIH for HIV Activities	-217,430
<b>Actual NCI Obligations, less AIDS funds</b>	<b>1,911,939</b>

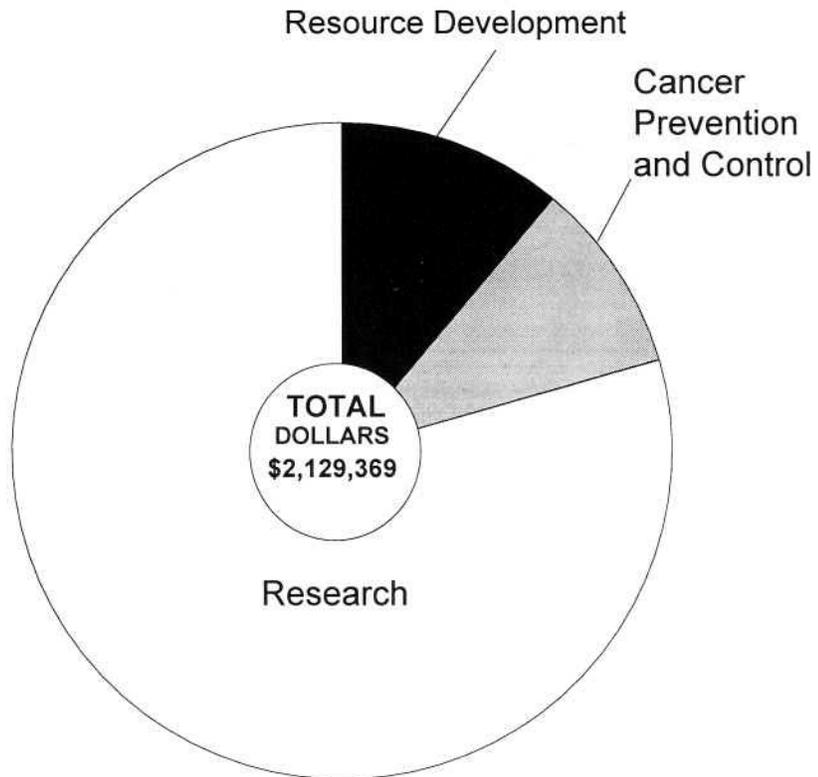
**B. Reimbursable Obligations:**

AIDS Reimbursement from Office of the Director, NIH	1,862
Other Reimbursements	13,912
<b>Reimbursements</b>	<b>15,774</b>

**C. Total NCI Obligations, less AIDS funds** **\$1,927,713**

**Program Structure**  
**Fiscal Year 1995**

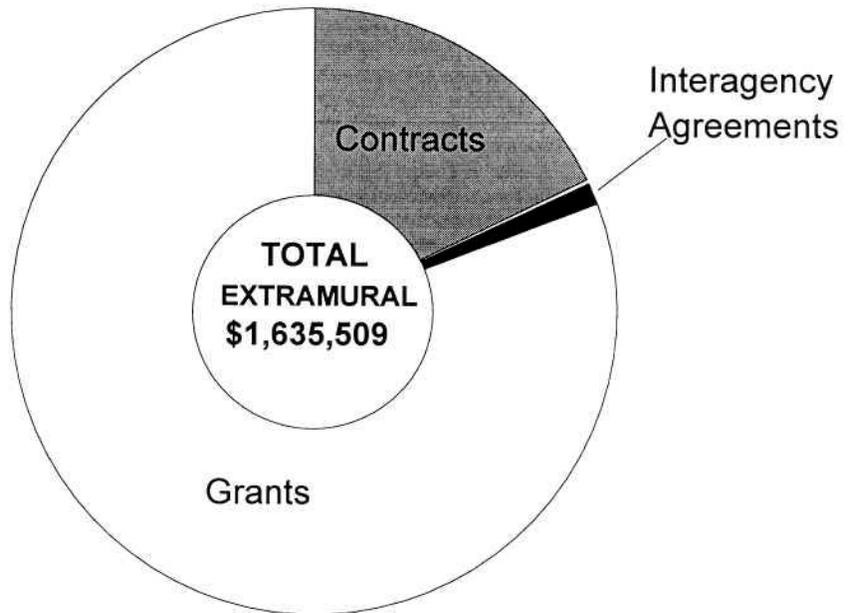
(Dollars in Thousands)



Budget Activity	Dollars	Percent
<b>Research:</b>		
Cancer Causation	\$596,712	28.0%
Detection and Diagnosis Research	133,123	6.3%
Treatment Research	642,026	30.2%
Cancer Biology	320,548	15.1%
<b>Subtotal Research</b>	<b>1,692,409</b>	<b>79.5%</b>
<b>Resource Development:</b>		
Cancer Centers Support	159,306	7.5%
Research Manpower Development	67,012	3.1%
Construction	8,353	0.4%
<b>Subtotal Resource Development</b>	<b>234,671</b>	<b>11.0%</b>
Cancer Prevention and Control	202,289	9.5%
<b>Total NCI</b>	<b>\$2,129,369</b>	<b>100.0%</b>

**Extramural Funds  
Fiscal Year 1995**

(Dollars in Thousands)



	Dollars	Percent
<b>Contracts:</b>		
SBIR Contracts	\$1,166	0.1%
Research Support Contracts	188,197	11.5%
Cancer Control Contracts	100,211	6.1%
Construction Contracts	1,430	0.1%
Subtotal Contracts	291,004	17.8%
<b>Interagency Agreements</b>	21,828	1.3%
<b>Grants:</b>		
Research Project Grants	952,736	58.3%
Cancer Centers/SPORES	156,766	9.6%
Training Activities	38,571	2.4%
Other Research Grants	106,042	6.5%
Cancer Control Grants	61,992	3.8%
Construction Grants	6,570	0.4%
Subtotal Grants	1,322,677	80.9%
<b>Total Extramural Funds</b>	<b>1,635,509</b>	<b>100.0%</b>
<b>Total Intramural/RMS/Control</b>	<b>493,860</b>	
<b>Total NCI</b>	<b>\$2,129,369</b>	

**Total NCI Dollars by Mechanism**  
**Fiscal Year 1995**

(Dollars in Thousands)

		Number	Amount	Percent of Total
<b>Research Grants:</b>				
Research Project Grants:				
Traditional	Awards:	1,808	\$439,122	20.6%
Program Projects		149	171,524	8.1%
FIRST Awards		342	36,014	1.7%
MERIT Awards		142	45,125	2.1%
Outstanding Investigator Grants		67	63,032	3.0%
RFAs		314	72,409	3.4%
Cooperative Agreements		253	81,771	3.8%
Shannon Awards		19	1,126	0.1%
Small Grants		44	2,488	0.1%
Exploratory/Developmental Grants		34	7,640	0.4%
SBIR Grants		191	32,485	1.5%
Subtotal, Research Project Grants		3,363	952,736	44.7%
Cancer Centers Grants		55	131,231	6.2%
SPOREs		12	25,535	1.2%
Subtotal, Centers		67	156,766	7.4%
Other Research Grants:				
Career Program				
RCDA-KO4		19	1,262	0.1%
Clinical Oncology-K12		20	3,189	0.1%
Physician Investigator-K11		48	4,027	0.2%
Preventive Oncology-KO7		25	2,196	0.1%
Clinical Investigator-KO8		63	5,010	0.2%
Subtotal, Career Program		175	15,684	0.7%
Cancer Education Program		67	8,393	0.4%
Clinical Cooperative Groups		152	75,192	3.5%
Minority Biomedical Support		0	2,071	0.1%
Scientific Evaluation		1	3,767	0.2%
Continuing Education Grants		1	439	0.0%
Conference Grants		42	494	0.0%
Subtotal, Other Research Grants		438	106,040	5.0%
Subtotal, Research Grants		3,868	1,215,542	57.1%
<b>NRSA Fellowships</b>	Trainees:	1,469	38,571	1.8%
<b>Research and Development Contracts:</b>				
R&D Contracts	Awards:	236	204,308	9.6%
SBIR Contracts		6	1,166	0.1%
Subtotal, Contracts		242	205,474	9.6%
<b>Intramural Research:</b>				
Intramural Research	FTEs:	1,571	252,621	11.9%
Management Fund			120,442	5.7%
Subtotal, Intramural Research		1,571	373,063	17.5%
<b>Research Management &amp; Support:</b>				
Research Management & Support	FTEs:	479	83,701	3.9%
Management Fund			12,743	0.6%
Subtotal, RMS		479	96,444	4.5%
<b>Cancer Prevention and Control:</b>				
Cancer Control Grants			61,992	2.9%
Cancer Control Contracts			105,928	5.0%
Inhouse	FTEs:	169	22,599	1.1%
Management Fund			1,756	0.1%
Subtotal, Prevention and Control		169	192,275	9.0%
<b>Construction</b>		0	8,000	0.4%
<b>Total NCI</b>	FTEs:	2,219	\$2,129,369	100.0%

**Division Obligations  
by Mechanism  
Fiscal Year 1995**

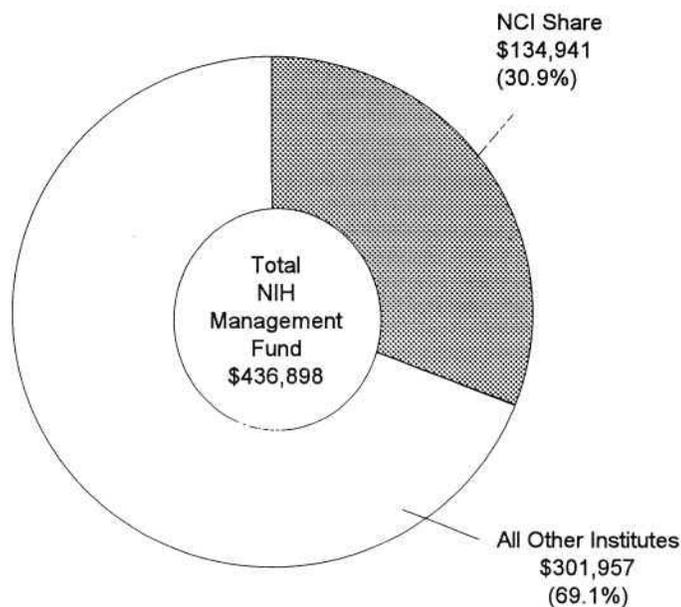
(Dollars in Thousands)

	DCBDC	DCT	DCE	DCPC	DEA	FCRDC	OD	Research Grants	Program Support(1)	TOTAL NCI
<b>Research Grants:</b>										
Research Project Grants								\$920,251		\$920,251
SBIR Grants								32,485		32,485
Subtotal, Research Project Grants								952,736		952,736
Cancer Centers Grants	\$131,231									131,231
SPOREs	25,535									25,535
Subtotal, Centers	156,766									156,766
<b>Other Research Grants:</b>										
Career Program	15,101				\$583					15,684
Cancer Education Program	8,393									8,393
Clinical Cooperative Groups		\$75,192								75,192
Minority Biomedical Support					2,071					2,071
Scientific Evaluation					3,767					3,767
Instrumentation Grants										
Continuing Ed. Train. Grants								439		439
Conference Grants								494		494
Subtotal, Other Research Grants	23,494	75,192			6,421			933		106,040
Subtotal, Research Grants	180,260	75,192			6,421			953,669		1,215,542
<b>NRSA Fellowships</b>	38,475				96					38,571
<b>Research and Development</b>										
<b>Contracts:</b>										
R&D Contracts	6,837	60,712	\$37,265	\$14,097	1,156	\$57,641	\$16,757		\$9,843	204,308
SBIR Contracts							1,166			1,166
Subtotal, Contracts	6,837	60,712	37,265	14,097	1,156	57,641	17,923		9,843	205,474
<b>Intramural Research:</b>										
Intramural Research	68,415	98,946	65,945	3,016	209	10,236	2,917		2,937	252,621
Management Fund									120,442	120,442
Subtotal, Intramural Research	68,415	98,946	65,945	3,016	209	10,236	2,917		123,379	373,063
<b>Research Management &amp; Support:</b>										
Research Management & Suppt.	2,286				8,010	2,580	47,916		22,909	83,701
Management Fund									12,743	12,743
Subtotal, RMS	2,286				8,010	2,580	47,916		35,652	96,444
<b>Cancer Prevention and Control:</b>										
Cancer Control Grants				61,992						61,992
Cancer Control Contracts				105,928						105,928
Inhouse				22,599						22,599
Management Fund									1,756	1,756
Total Prevention & Control				190,519					1,756	192,275
<b>Construction</b>	6,570					1,430				8,000
<b>Division Totals</b>	<b>\$302,843</b>	<b>\$234,850</b>	<b>\$103,210</b>	<b>\$207,632</b>	<b>\$15,892</b>	<b>\$71,887</b>	<b>\$68,756</b>	<b>\$953,669</b>	<b>\$170,630</b>	<b>\$2,129,369</b>

(1) Includes Central Assessments for DHHS-NIH General Expense, Management Fund, and Program Evaluation

**NIH Management Fund  
Reimbursement  
Fiscal Year 1995**

*(Dollars in Thousands)*



DISTRIBUTION OF NCI PAYMENT		
	Dollars	Percent
Clinical Center	\$87,427	64.8%
Division of Research Grants	5,251	3.9%
Division of Computer Research and Technology	6,714	5.0%
GSA Rental Payments for Space	6,839	5.1%
Other Research Services	28,710	21.3%
<b>Total, NCI Payment</b>	<b>\$134,941</b>	<b>100.0%</b>

The Management Fund provides for the financing of certain common research and administrative support activities which are required in the operations of NIH:

**Clinical Center:** Admissions and followup, anesthesiology, diagnostic x-ray, nuclear medicine, clinical pathology, blood bank, rehabilitation medicine, pharmacy, medical records, nursing services, patient nutrition service, housekeeping services, laundry, and social work

**Division of Research Grants:** initial scientific review of applications, assignment of research grant applications to institutes

**Division of Computer Research and Technology:** Research and development program in which concepts and methods of computer science are applied to biomedical problems

**GSA Rental Payments for Space:** building rental including utilities and guard services

**Other Research Services:** procurement, safety, engineering, biomedical engineering, veterinary resources, and library

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## Special Sources of Funds

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### CRADAs

As a result of the Federal Technology Transfer Act of 1986, government laboratories are authorized to enter into Cooperative Research and Development Agreements (CRADAs) with private sector entities. Licensing agreements are usually incorporated into the CRADA document, which addresses patent rights attributable to research supported under the CRADA.

### CRADA Receipts Deposited to the U.S. Treasury (dollars in thousands)

	Carryover from Prior Year	Receipts	Obligations
1990	\$ 116	\$ 61	\$125
1991	52	115	66
1992	101	1,627	466
1993	1,262	2,509	1,582
1994	2,189	2,248	1,917
1995	2,570	2,653	1,478
1996	3,745		

### Royalty Income

NCI retains a portion of the royalty income generated by the patents related to NCI-funded research. A major portion of this royalty income is used to reward employees of the laboratory, to further scientific exchange and for education and training in accordance with the terms of the Act. Receipts are also used to support the costs of processing and collecting royalty income. Support is also provided to cover expenses associated with technology transfer efforts in NCI and NIH.

### Royalty Income Funding History (dollars in thousands)

Years Available	Collections*	Inventor Payments	Other**
1989/1990	\$ 813	\$ 575	\$ 238
1990/1991	1,452	871	581
1991/1992	2,084	431	1,653
1992/1993	2,105	451	1,654
1993/1994	5,700	983	4,717
1994/1995	11,244	1,235	10,009
1995/1996	9,031	953	8,078

\* Does not include assessments by NIH and NTIS.

\*\* To be used for the furtherance of technology transfer



**Grant and Contract  
Awards by State  
Fiscal Year 1995**

State	Grants		Contracts		Total NCI
	Number	Amount	Number	Amount	
Alabama	41	\$12,824	16	\$7,171	\$19,995
Alaska	2	266	1	216	482
Arizona	36	18,320	3	552	18,872
Arkansas	11	2,442			2,442
California	521	187,139	30	80,511	267,650
Colorado	53	16,727	6	3,960	20,687
Connecticut	55	17,907	4	1,821	19,728
Delaware	3	566			566
District of Columbia	66	20,735	14	6,083	26,818
Florida	50	12,962	4	1,481	14,443
Georgia	33	6,491	15	3,665	10,156
Hawaii	18	7,149	3	2,799	9,948
Idaho					
Illinois	139	39,187	15	4,762	43,949
Indiana	28	6,675	4	1,624	8,299
Iowa	19	3,466	6	3,143	6,609
Kansas	18	3,972	5	3,398	7,370
Kentucky	25	3,484	3	736	4,220
Louisiana	13	2,423	1	49	2,472
Maine	8	2,532	1	808	3,340
Maryland	136	45,614	111	90,110	135,724
Massachusetts	344	127,452	11	6,224	133,676
Michigan	142	39,006	9	8,184	47,190
Minnesota	82	31,150	7	4,185	35,335
Mississippi	4	418			418
Missouri	63	14,999	8	4,477	19,476
Montana	3	448			448
Nebraska	22	6,113			6,113
Nevada	5	715			715
New Hampshire	34	11,075	1	387	11,462
New Jersey	43	13,703	4	4,424	18,127
New Mexico	13	3,150	6	2,620	5,770
New York	392	144,216	27	12,648	156,864
North Carolina	144	50,926	17	11,667	62,593
North Dakota	5	771			771
Ohio	125	29,400	10	5,033	34,433
Oklahoma	9	1,069	1	188	1,257
Oregon	22	5,578	2	248	5,826
Pennsylvania	289	109,976	10	5,138	115,114
Rhode Island	25	7,660	1	749	8,409
South Carolina	19	3,435	1	758	4,193
South Dakota	3	445			445
Tennessee	80	24,038	4	1,896	25,934
Texas	269	86,022	11	3,454	89,476
Utah	40	10,779	5	3,585	14,364
Vermont	19	5,798	1	153	5,951
Virginia	58	20,190	12	8,388	28,578
Washington	152	68,111	8	4,456	72,567
West Virginia	6	983	2	1,561	2,544
Wisconsin	83	24,731	6	3,730	28,461
Wyoming					
Total	3,770	1,253,238	406	307,042	1,560,280
Puerto Rico	1	304			304
US Virgin Islands	1	15			15
Total	3,772	\$1,253,557	406	\$307,042	\$1,560,599

**NCI Foreign Research  
Grants and Contracts  
Fiscal Year 1995**

*(Dollars in Thousands)*

Country	Grant		Contract		Total NCI Awards	Percent of Total Dollars Awarded
	Number	Amount	Number	Amount		
Australia	8	\$999			\$999	8.1%
Belgium	2	442			442	3.6%
Canada	23	2,622	1	\$81	2,703	22.0%
China			5	801	801	6.5%
Costa Rica			1	250	250	2.0%
Denmark	1	258			258	2.1%
Finland			2	618	618	5.0%
France	2	655			655	5.3%
Israel	4	563			563	4.6%
Italy	1	5			5	0.0%
Jamaica			1	735	735	6.0%
Japan			2	344	344	2.8%
Netherlands			1	437	437	3.6%
New Zealand			2	847	847	6.9%
Republic of South Africa	1	60			60	0.5%
Sweden	2	500	2	231	731	6.0%
Trinidad			1	761	761	6.2%
United Kingdom	5	367	2	685	1,052	8.6%
<b>Total Foreign</b>	<b>49</b>	<b>\$6,471</b>	<b>20</b>	<b>\$5,790</b>	<b>\$12,261</b>	<b>100.0%</b>

**Institutions Receiving More than  
\$10,000,000 in NCI Support  
Fiscal Year 1995**

(Dollars in Thousands)

State	Institution	Grants	Contracts	Construction	Total NCI
Alabama	University of Alabama System	\$12,067	\$2,940		\$15,007
Arizona	University of Arizona	17,092	517		17,609
California	University of California System	77,329	2,828		80,157
	Stanford University	22,635			22,635
	University of Southern California	18,923	2,463		21,386
	Scripps Research Institute	10,225			10,225
Colorado	University of Colorado System	8,118	2,221		10,339
Connecticut	Yale University	17,297	1,107		18,404
District of Columbia	Georgetown University	11,777	1,158		12,935
Illinois	University of Chicago	17,462	689		18,151
	University of Illinois System	7,866	2,546		10,412
Maryland	Johns Hopkins University	36,709	1,193		37,902
	Organon Teknika Corporation		13,922		13,922
	Westat, Inc.		19,122		19,122
Massachusetts	Dana-Farber Cancer Institute	24,237			24,237
	Harvard University	18,566			18,566
	Massachusetts General Hospital	13,432		\$5,243	18,675
	Brigham and Women's Hospital	17,623			17,623
	Massachusetts Institute of Technology	10,291			10,291
Michigan	University of Michigan at Ann Arbor	20,615	508		21,123
	Wayne State University	11,310			11,310
Minnesota	University of Minnesota	16,796	2,672		19,468
	Mayo Foundation	12,807	300		13,107
Missouri	Washington University	10,597	1,427		12,024
New Hampshire	Dartmouth College	11,037	388		11,425
New York	Memorial Sloan-Kettering	33,148	3,189		36,337
	Columbia University	13,611			13,611
	New York University	15,362	528		15,890
	Yeshiva University	11,496			11,496
	American Health Foundation	10,827	1,088	457	12,372
	New York State Dept. of Health	14,732	3,233		17,965
North Carolina	University of North Carolina System	24,639	298		24,937
	Duke University	21,902	746		22,648
Ohio	Case Western Reserve University	13,009	1,775		14,784
Pennsylvania	University of Pittsburgh	33,879	2,752		36,631
	University of Pennsylvania	18,394			18,394
	Fox Chase Cancer Center	23,140	1,088		24,228
	Thomas Jefferson University	14,964			14,964
Tennessee	St. Jude Children's Research Hospital	12,282			12,282
	Vanderbilt University	10,166			10,166
Texas	University of Texas System	60,173	2,318		62,491
	Cancer Therapy and Research Center	15,069		870	15,939
	Baylor College of Medicine	9,964	557		10,521
Utah	Utah State Higher Education System	10,174	3,585		13,759
Washington	Fred Hutchinson Cancer Research Center	47,394	2,831		50,225
	University of Washington	15,679	264		15,943
Wisconsin	University of Wisconsin System	22,379	1,102		23,481
Total		\$877,194	\$81,355	\$6,570	\$965,119

## Cancer Centers Funding History

Fiscal Year	1990	1991	1992	1993	1994	1995
Center Support	\$105,268,000	\$110,481,000	\$127,351,000	\$123,930,000	\$136,269,000	\$131,231,000
Annual Growth	4.1%	5.0%	15.3%	-2.7%	10%	-3.7%

Cancer centers supported by the NCI multidisciplinary research programs at academic and other organizations are one of the key elements of the research infrastructure for cancer research. As a group, they are engaged in all aspects of cancer research, including basic, clinical, and cancer control research. Cancer Centers also serve as a stable resource for training new cancer investigators. Of the 55 Cancer Center Support Grants (CCSGs) awarded in FY 1995, 11 were to basic laboratory centers, 1 was to a consortium center, 17 were to clinical centers, and 26 were to comprehensive centers. In addition, 13 of the 14 Cancer Center Planning Grants which were funded in FYs 1992 and 1993 continued in FY 1995, and three new awards were issued. The Cancer Center Planning Grants initiative was begun in FY 1992 to increase geographical distribution of cancer centers in under represented areas of the country.

Funding initiatives, designed to strengthen the Cancer Centers Program and promote the fulfillment of its mission, include the following: (1) R21 Exploratory/Developmental Grants were awarded to six cancer centers to establish new research programs in prostate cancer. Funds were also awarded to five cancer centers for meritorious pilot projects to strengthen their research in this area. Additional funds from the National Institute for Environmental Health Sciences (NIEHS) allowed for partial funding of two applications whose research emphasis was of high programmatic priority to NIEHS. A total of approximately \$2.3 million was expended for this initiative; (2) Through a special competing initiative and \$50,000 commitment by the Office of Research for Minority Health, NIH, the Cancer Centers Branch provided travel support for cancer center members and the center networks' Native American members for participation in the Third Native American Cancer Conference in Seattle, Washington in June, 1995; (3) The P20 planning grants for the development of breast cancer research programs in NCI-designated cancer centers initiated in 1994 were converted from the P20 grant mechanism to the R21 grant mechanism. This was based on the focus of the developing program on exploratory /feasibility studies to stimulate development of breast cancer programs, which is more suited to the R21 mechanism; (4) Based on discussions at the 1995 Cancer Centers Directors Workshop and recommendation by the National Cancer Advisory Board's (NCAB) Cancer Centers Subcommittee, the NCAB approved that the essential element of High Priority Clinical Trials (HPCTs) required previously for comprehensiveness review will no longer be an essential required element. However, it was also stressed that the centers should nevertheless be encouraged to participate in HPCTs whenever feasible; (5) three new planning grants (P20) were awarded in FY 1995, to Washington University in St. Louis, Missouri, Louisiana State University in New Orleans, Louisiana, and the University of Kentucky, Lexington, Kentucky; (6) institutions that are not current recipients of CCSGs, in addition to institutions that were awarded planning grants in 1992, submitted competing applications to become NCI-designated cancer centers; (7) two new Cancer Center Support Grants were awarded in FY 1995, to Thomas Jefferson University in Philadelphia, Pennsylvania and Vanderbilt University in Nashville, Tennessee; (8) Several policies governing the CCSG Guidelines were refined and implemented during FY 1995. These refinements include: (a) increase of CCSG support from 0.5 to 1.0 FTE for the Clinical Protocol Scientific Review and Monitoring System and (b) provision of developmental funds for methodology research in the highly specialized CCSG supported shared resources; (9) workshops were again held for Cancer Center Directors of both established cancer centers as well as the recipients of P20 Planning Grants.

In collaboration with the National Institute of Environmental Sciences, a Request for Application (RFA), was issued for establishing new interactive, multidisciplinary basic, clinical, and prevention and control research programs in prostate cancer. While basic laboratory research was the foundational component of the RFA, it encouraged applicants to include elements that addressed the special emphasis areas of environmental and occupational carcinogenesis, prevention and control research opportunities, and/or the unusually high incidence and mortality rates in under served minority and other high risk populations in their areas of influence.

In FY 1995, awards were made to six cancer centers to establish new programs in prostate cancer research and to five cancer centers for meritorious pilot projects to strengthen their research in this area.

The Cancer Center Planning Grant, designed in 1992 to increase the geographic distribution of cancer centers in areas of the country not currently served by NCI-designated cancer centers, was awarded to 14 institutions in FY 1992 and 1993. As a way to further encourage the representation of cancer centers in under served areas, an RFA was again issued in FY 1994 to announce the availability of planning and development grants for cancer centers for this purpose. This initiative was intended to provide current P20 recipients an opportunity to continue their planning and development activities or for new institutions to begin similar ventures. In addition to basic cancer research, these centers are expected to emphasize clinical and prevention/control research that will ultimately impact on the populations in their regions, paying particular attention to minority, rural, and other under served populations. Three awards were made in FY 1995 in response to this initiative.

Since 1978, the NCI has recognized a category of cancer centers designated as Comprehensive, and so termed because of the broad array of cancer research, training, information, and outreach services they provide to their communities. Comprehensive Guidelines, issued in 1990 and revised in 1993 and 1995, refined and clarified the concept of an NCI-designated comprehensive cancer center, the application procedures and the peer review criteria that centers were to use to attain and renew this designation. The revised guidelines introduced greater rigor and consistency to the process of achieving comprehensive status, requiring meritorious achievement in the following review criteria.

### Criteria for Comprehensiveness

Together with scientific excellence and leadership, the essential programmatic elements of a comprehensive cancer center include:

- 1) **Basic Laboratory Research:** A critical mass of integrated personnel, facilities and peer-reviewed support for interdisciplinary basic research is essential in a comprehensive cancer center.
- 2) **Basic/Clinical Research Linkage:** A comprehensive cancer center should facilitate the transfer of exciting laboratory discoveries to innovative clinical applications, including clinical treatment and prevention.
- 3) **Clinical Research:** A significant clinical research program utilizing patient resources of the institution and its region is essential.
- 4) **Education and Training of Biomedical Researchers and Health Care Professionals:** Comprehensive cancer centers are expected to have peer-reviewed research in cancer prevention and control and to have planned or ongoing involvement in cancer control on a regional and national basis.
- 5) **Public Information Services:** It is essential that a comprehensive center be a focal point for clinical and research training, including state-of-the-art research and technology, for health care professionals locally and within the region.
- 6) **Information Services:** A comprehensive cancer center should have an established patient education program and the ability to provide patients and their families with up-to-date information on local as well as national resources that may be needed. In addition, the center should participate in its region's Cancer Information Service.
- 7) **Community Service and Outreach:** A comprehensive cancer center should define the community it serves, take steps to identify cancer issues and problems in this community, and carry out appropriate outreach programs addressing these concerns including cancer prevention and control activities.

## Cancer Centers by State (P30 Core Grants)

State	Grantee Institution	Type	Awarded
Alabama	University of Alabama at Birmingham	Comprehensive	\$3,983,562
Arizona	University of Arizona	Comprehensive	1,703,593
California	Beckman Research Institute/City of Hope	Clinical	1,875,839
	La Jolla Cancer Research Foundation	Lab/Basic	1,488,389
	Salk Institute for Biological Sciences	Lab/Basic	1,842,009
	University of California at Los Angeles	Comprehensive	3,239,719
	University of California at San Diego	Clinical	1,465,844
	University of California, Irvine Clinical Cancer Center	Clinical	1,112,659
	Charles R. Drew University of Medicine and Science	Clinical	700,000
	University of Southern California	Comprehensive	3,500,973
	University of Colorado Health Sciences Center	Clinical	2,109,279
Colorado	University of Colorado Health Sciences Center	Clinical	2,109,279
Connecticut	Yale University	Comprehensive	1,597,918
District of Columbia	Georgetown University	Comprehensive	1,829,515
Florida	University of Miami	Comprehensive	1,039,249
Illinois	Northwestern University	Clinical	1,211,108
	University of Chicago	Clinical	1,847,505
Indiana	Purdue University West Lafayette	Lab/Basic	662,577
Maine	Jackson Laboratory	Lab/Basic	1,240,534
Maryland	Johns Hopkins University	Comprehensive	4,487,349
Massachusetts	Dana-Farber Cancer Institute	Comprehensive	3,351,800
	Massachusetts Institute of Technology	Lab/Basic	1,979,980
	University of Michigan at Ann Arbor	Comprehensive	1,890,883
Michigan	Wayne State University	Comprehensive	1,606,028
Minnesota	Mayo Foundation	Clinical	2,290,106
Nebraska	University of Nebraska Medical Center	Lab/Basic	971,673
New Hampshire	Dartmouth College	Comprehensive	1,662,995
New York	Cold Spring Harbor Laboratory	Lab/Basic	2,669,134
	Columbia University New York	Clinical	3,004,917
	Kaplan Comprehensive Cancer Center/NYU	Comprehensive	3,403,005
	Roswell Park Memorial Institute	Comprehensive	2,190,369
	Memorial Sloan-Kettering	Comprehensive	6,133,391
	University of Rochester	Clinical	1,189,384
	American Health Foundation	Lab/Basic	2,830,588
	Albert Einstein College of Medicine	Clinical	3,653,731
	Duke University	Comprehensive	3,773,620
	University of North Carolina Chapel Hill	Comprehensive	2,324,033
North Carolina	Wake Forest University/Bowman Gray Sch. of Medicine	Comprehensive	1,826,013
	Case Western Reserve University	Clinical	648,653
Ohio	Ohio State University	Comprehensive	1,951,420
Pennsylvania	Fox Chase Cancer Center	Comprehensive	5,995,805
	Thomas Jefferson University	Clinical	1,125,927
	University of Pennsylvania	Comprehensive	2,991,069
	University of Pittsburgh	Comprehensive	1,906,283
	Wistar Institute of Anatomy and Biology	Lab/Basic	3,127,483
Tennessee	St. Jude Children's Research Hospital	Clinical	3,622,658
	Drew-Meharry-Morehouse Consortium Cancer Center	Consortium	1,129,775
Texas	San Antonio Cancer Institute	Clinical	1,604,400
	M.D. Anderson Cancer Center/Univ. of Texas	Comprehensive	2,411,168
Utah	University of Utah	Clinical	1,310,321
Vermont	University of Vermont	Comprehensive	1,043,599
Virginia	University of Virginia	Lab/Basic	950,122
	Medical College of Virginia/VCU	Clinical	881,048
Washington	Fred Hutchinson Cancer Research Center	Comprehensive	5,338,297
Wisconsin	McArdle Laboratory for Cancer Research	Lab/Basic	2,718,153
	University of Wisconsin Madison	Comprehensive	2,812,175
Total P30s		55	125,257,627
P20 Planning Grants			5,973,373
Total Cancer Centers			\$131,231,000

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## Specialized Programs of Research Excellence SPORES

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In 1992, the NCI established the Specialized Programs of Research Excellence (SPORES) to promote interdisciplinary research and to speed the bidirectional exchange between basic and clinical science in order to move basic research findings from the laboratory to applied settings involving patients and populations. The ultimate goal of the SPORE program is to bring novel ideas that have the potential to reduce cancer incidence and mortality, improve survival, and to improve the quality of life to clinical care settings.

Laboratory and clinical scientists work collaboratively in planning, designing and implementing research programs that impact on cancer prevention, detection, diagnosis, treatment and control. To facilitate this research, each SPORE develops and maintains specialized resources that benefit all scientists working on the specific cancer site, as well as SPORE scientists. An additional SPORE element is a career development program that recruits scientists both within and outside the SPORE institution to enlarge the cadre of laboratory and clinical scientists dedicated to translational research on human cancer. SPORES meet annually to share data, assess research progress, identify new research opportunities and establish priorities for research most likely to reduce incidence and mortality and to increase survival.

In 1995, NCI funded a total of 12 SPORES and 11 P20 Planning Grants for a total of \$25,535,000. SPORES are funded through both the P50 and P20 mechanisms. Twelve institutions received full support as P50 SPORES. Eleven P20s were awarded to institutions as Type 5's to conduct feasibility studies to determine whether they would qualify to become fully funded SPORE institutions. In the upcoming years, NCI may increase the use of the SPORE mechanism to include funding for other major cancer sites.

<u>Site</u>	<u>Type</u>	<u>Number of Awards</u>	<u>Amount of Funding</u>
Breast	P50	6	\$12,696,607
	<b>Total Breast</b>	<b>6</b>	<b>12,696,607</b>
Gastrointestinal	P50	1	1,613,194
	<b>Total Gastrointestinal</b>	<b>1</b>	<b>1,613,194</b>
Lung	P50	2	4,099,569
	<b>Total Lung</b>	<b>2</b>	<b>4,099,569</b>
Prostate	P50	3	5,560,781
	<b>Total Prostate</b>	<b>3</b>	<b>5,560,781</b>
Brain Tumor	P20	11	1,564,849
	<b>Total Brain Tumor</b>	<b>11</b>	<b>1,564,849</b>
	<b>P20</b>	<b>12</b>	<b>1,564,849</b>
	<b>P50</b>	<b>11</b>	<b>23,970,151</b>
	<b>Total SPORES</b>		<b>\$25,535,000</b>

**Total Research  
Project Grants  
Fiscal Years 1988-1995**

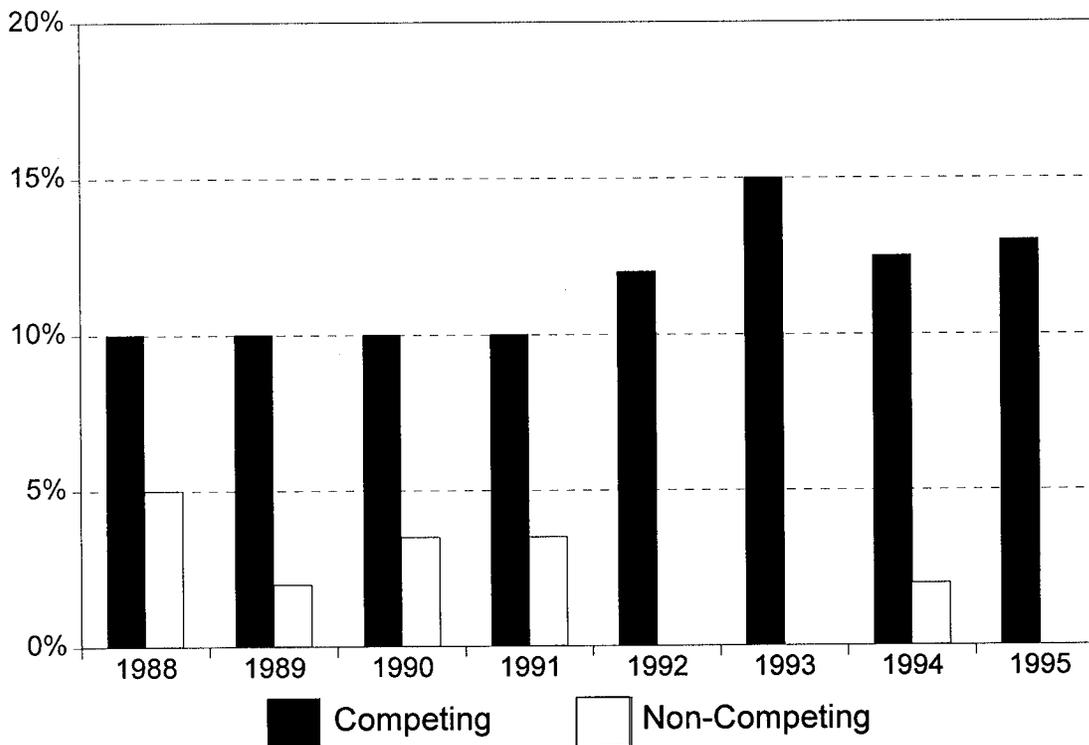
(Dollars in Thousands)

Fiscal Year	Type Awarded	Requested		Awarded		Success Rate
		No.	Amt.	No.	Amt.	
1989	Competing					
	New.....	2,290	\$474,978	402	\$73,081	
	Renewal.....	823	246,172	324	85,645	
	Board Supplement.....	14	2,883	2	49	
	Subtotal.....	3,127	724,033	728	158,775	23.3%
	Noncompeting.....			2,374	564,234	
	<b>Total.....</b>			<b>3,102</b>	<b>723,009</b>	
1990	Competing					
	New.....	2,193	\$527,256	421	\$82,656	
	Renewal.....	849	278,541	302	87,497	
	Board Supplement.....	15	2,837	5	991	
	Subtotal.....	3,057	808,634	728	171,144	23.8%
	Noncompeting.....			2,288	568,336	
	<b>Total.....</b>			<b>3,016</b>	<b>739,480</b>	
1991	Competing					
	New.....	2,195	\$512,665	513	\$102,364	
	Renewal.....	837	286,858	323	94,231	
	Board Supplement.....	8	1,161	4	421	
	Subtotal.....	3,040	800,684	840	197,016	27.6%
	Noncompeting.....			2,207	594,532	
	<b>Total.....</b>			<b>3,047</b>	<b>791,548</b>	
1992	Competing					
	New.....	2,508	\$612,369	664	\$119,091	
	Renewal.....	815	332,428	398	133,413	
	Board Supplement.....	23	3,704	17	1,347	
	Subtotal.....	3,346	948,501	1,079	253,851	32.2%
	Noncompeting.....			2,231	620,006	
	<b>Total.....</b>			<b>3,310</b>	<b>873,857</b>	
1993	Competing					
	New.....	3,173	\$746,912	644	\$114,227	
	Renewal.....	891	328,657	340	107,949	
	Board Supplement.....	75	8,554	7	1,698	
	Subtotal.....	4,139	1,084,123	991	223,874	23.9%
	Noncompeting.....			2,346	692,436	
	<b>Total.....</b>			<b>3,337</b>	<b>916,310</b>	
1994	Competing					
	New.....	3,643	\$787,824	657	\$118,403	
	Renewal.....	935	342,068	308	110,723	
	Board Supplement.....	20	3,311	4	733	
	Subtotal.....	4,598	1,133,203	969	229,859	21.1%
	Noncompeting.....			2,436	704,665	
	<b>Total.....</b>			<b>3,405</b>	<b>934,524</b>	
1995	Competing					
	New.....	3,345	\$789,560	645	\$119,760	
	Renewal.....	1,048	403,577	375	127,065	
	Board Supplement.....	21	7,502	10	1,537	
	Subtotal.....	4,414	1,200,639	1,030	248,362	23.3%
	Noncompeting.....			2,333	704,374	
	<b>Total.....</b>			<b>3,363</b>	<b>952,736</b>	

Note: RPGs include R01 traditional grants, P01 program projects, R23 new investigator research awards, R29 FIRST awards, R35 Outstanding Investigator Grants, R37 MERIT awards, U01 Cooperative Agreement awards, R01 and U01 awards of Request for Applications, R03 small grants, R21 Exploratory/Developmental Grants and R43/R44 Small Business Innovative Research awards.

Success rate is the number of awarded grants divided by the number of awards requested. Requested data from 1986 through 1990 includes all submitted applications. Beginning in 1991, the requested data excludes applications not recommended for further review by DRG. 1993 requested data was updated since printing the 1993 Factbook.

**Research Project Grants  
Adjustments from Recommended Levels  
Fiscal Years 1988-1995**

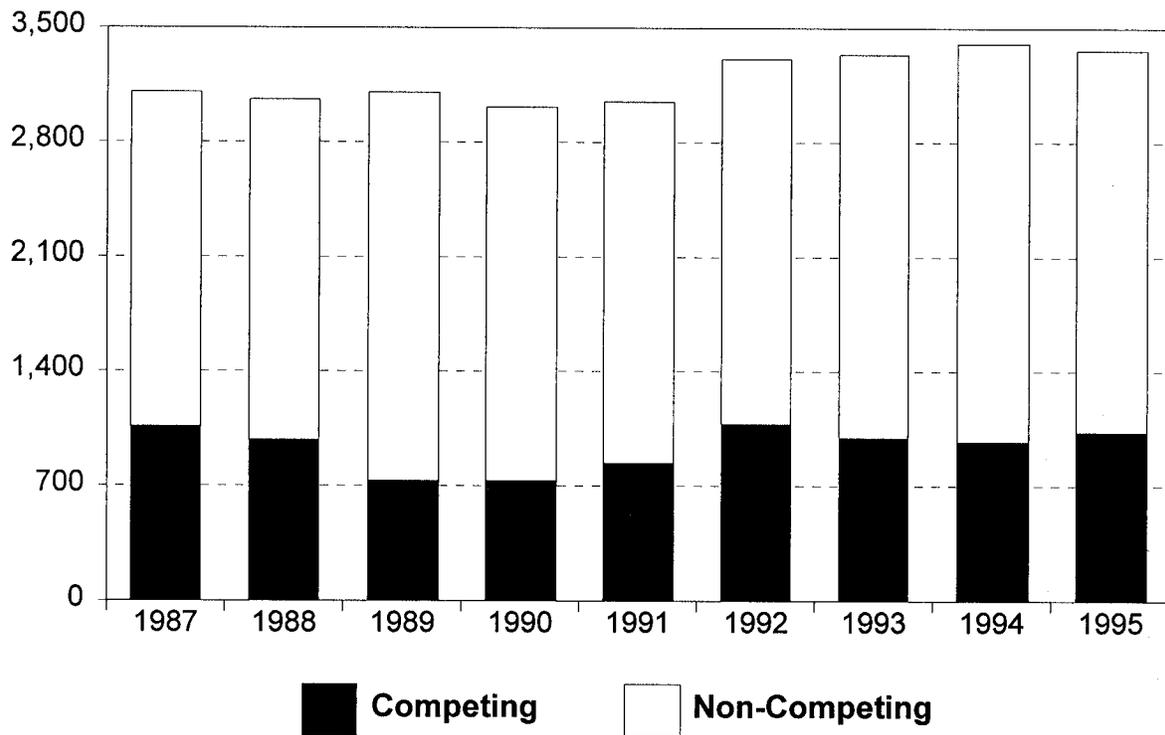


TYPE	1988	1989	1990	1991	1992	1993	1994	1995
Competing	10.0%	10.0%	10.0%	10.0%	12.0%	15.0%	12.5%	13.0%
Non-Competing	5.0%	2.0%	3.5%	3.5%	0.0%	0.0%	2.0%	0.0%

*NOTE: Future year (non-competing) approved amounts are reduced by the average percentage reductions applied during the competing grant cycle. The percent reductions shown are taken against this adjusted base. FY 1987, 1992 and 1993 non-competing awards were paid at the committed level.*

**Research Project Grants**  
**Number of Awards**  
**Fiscal Years 1987-1995**

Number of Awards



TYPE	1987	1988	1989	1990	1991	1992	1993	1994	1995
Competing	1,061	979	728	728	840	1,079	991	969	1,030
Non-Competing	2,042	2,078	2,374	2,288	2,207	2,231	2,346	2,436	2,333
Total	3,103	3,057	3,102	3,016	3,047	3,310	3,337	3,405	3,363

# Research Project Grants *(Dollars in Thousands)*

## Awarded

## History by Activity

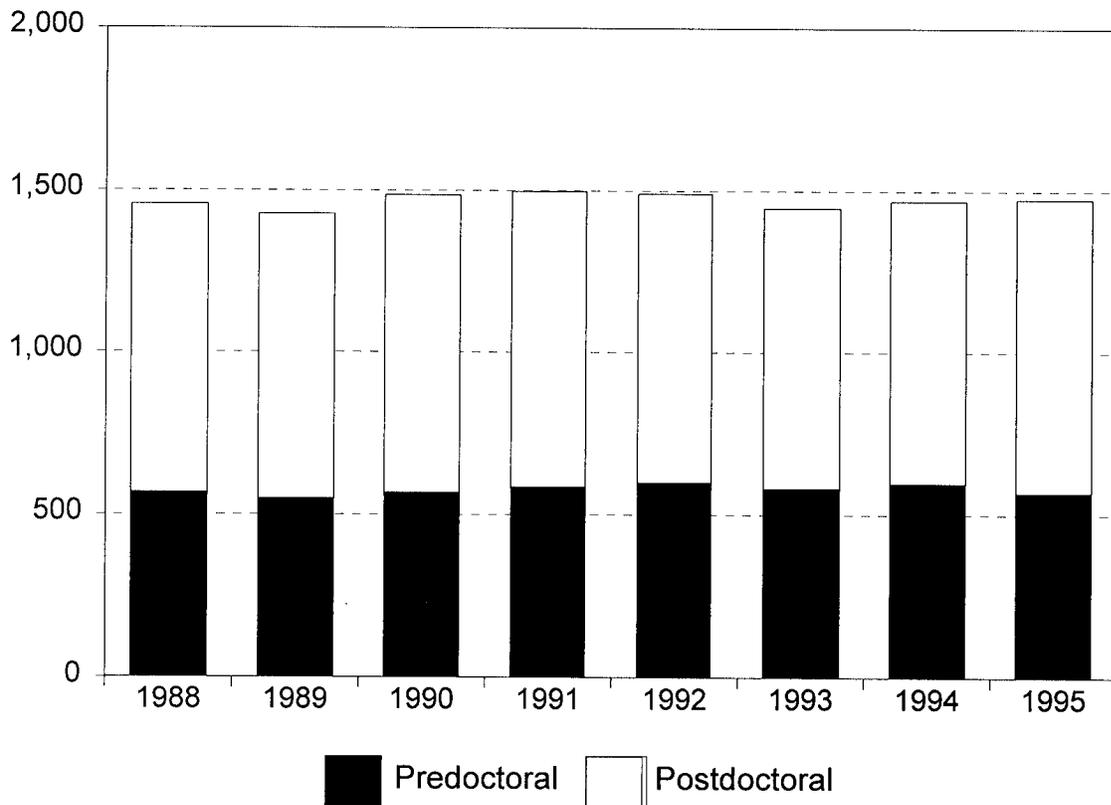
## Fiscal Years 1990-1995

TYPE	1990		1991		1992		1993		1994		1995	
	Number	Amount										
RO1	2,068	\$371,225	1,949	\$381,932	2,050	\$424,954	1,955	\$430,203	1,914	\$434,612	1,808	\$439,122
PO1	162	185,130	165	190,470	183	205,330	176	202,852	163	184,852	149	171,524
R35	78	57,857	84	62,137	76	59,878	75	61,337	72	61,369	67	63,032
R37	153	39,264	163	43,687	162	47,414	166	51,633	154	48,699	142	45,125
UO1	87	31,145	85	32,431	123	44,171	171	56,199	232	75,444	253	81,771
R29	280	25,547	316	29,494	309	29,726	291	29,053	312	32,610	342	36,014
RFA	101	17,335	154	37,435	208	45,107	282	63,267	319	70,879	314	72,409
R43-R44	87	11,977	131	13,962	199	17,277	215	20,401	179	22,773	191	32,485
R03									46	2,393	44	2,488
R21									5	353	34	7,640
R55							6	1,365	9	540	19	1,126
<b>TOTAL</b>	<b>3,016</b>	<b>\$739,480</b>	<b>3,047</b>	<b>\$791,548</b>	<b>3,310</b>	<b>\$873,857</b>	<b>3,337</b>	<b>\$916,310</b>	<b>3,405</b>	<b>\$934,524</b>	<b>3,363</b>	<b>\$952,736</b>

- RO1 Research Project (Traditional)**  
To support a discrete, specified, circumscribed project to be performed by the named investigator(s) in an area representing his/her specified interest and competencies.
- PO1 Research Program Projects**  
For the support of a broadly based, multidisciplinary, often long-term research program which has a specific major objective or a basic theme. A program project is directed toward a range of problems having a central research focus in contrast to the usually narrower thrust of the traditional research project.
- R35 Outstanding Investigator Grants**  
To provide long-term support to an experienced investigator with an outstanding record of research productivity. This support is intended to encourage investigators to embark on long-term projects of unusual potential in a categorical program area.
- R37 Method to Extend Research in Time (MERIT) Award**  
To provide long-term grant support to investigators whose research competence and productivity are distinctly superior and who are highly likely to continue to perform in an outstanding manner. Investigators may not apply for a MERIT award. Program staff and/or members of the cognizant National Advisory Council/Board will identify candidates for the MERIT award during the course of review of competing research grant applications prepared and submitted in accordance with regular PHS requirements.
- UO1 Research Project (Cooperative Agreement)**  
To support a discrete, specified, circumscribed project to be performed by the named investigator(s) in an area representing his/her specific interest and competencies.
- R29 First Independent Research Support and Transition (FIRST) Award**  
To provide a sufficient initial period of research support for newly independent biomedical investigators to develop their research capabilities and demonstrate the merit of their research ideas.
- RFA Request for Applications**  
A formal statement which invites grant or cooperative agreement applications in a well-defined scientific area to accomplish specific program purposes and indicates the amount of funds set aside for the competition and/or the estimated number of awards to be made.
- R43 Small Business Innovative Research (SBIR) Grants - Phase I**  
To support projects, limited in time and amount, to establish the technical merit and feasibility of R&D ideas which may ultimately lead to a commercial product(s) or service(s).
- R44 Small Business Innovative Research (SBIR) Grants - Phase II**  
To support in-depth development of R&D ideas whose feasibility has been established in Phase I and which are likely to result in commercial products or services.
- R03 Small Grants**  
To provide research support specifically limited in time and amount for studies in categorical program areas. Small grants provide flexibility for initiating studies, which are generally for preliminary short-term projects and are non-renewable.
- R21 Exploratory/Developmental Grants**  
To encourage the development of new research activities in categorical program areas. Support generally is restricted in level of support and in time.
- R23 New Investigator Research Awards**  
To support basic and clinical studies so that newly trained investigators remain active during the development stage of their careers.
- R55 Shannon Awards**  
To provide discrete limited support to scientists whose research applications fall short of the cutoff for funding yet are at the "margin of excellence" whereby the perceived quality of the grant is statistically indistinguishable from

**National Research  
Service Awards  
Fiscal Years 1988-1995**

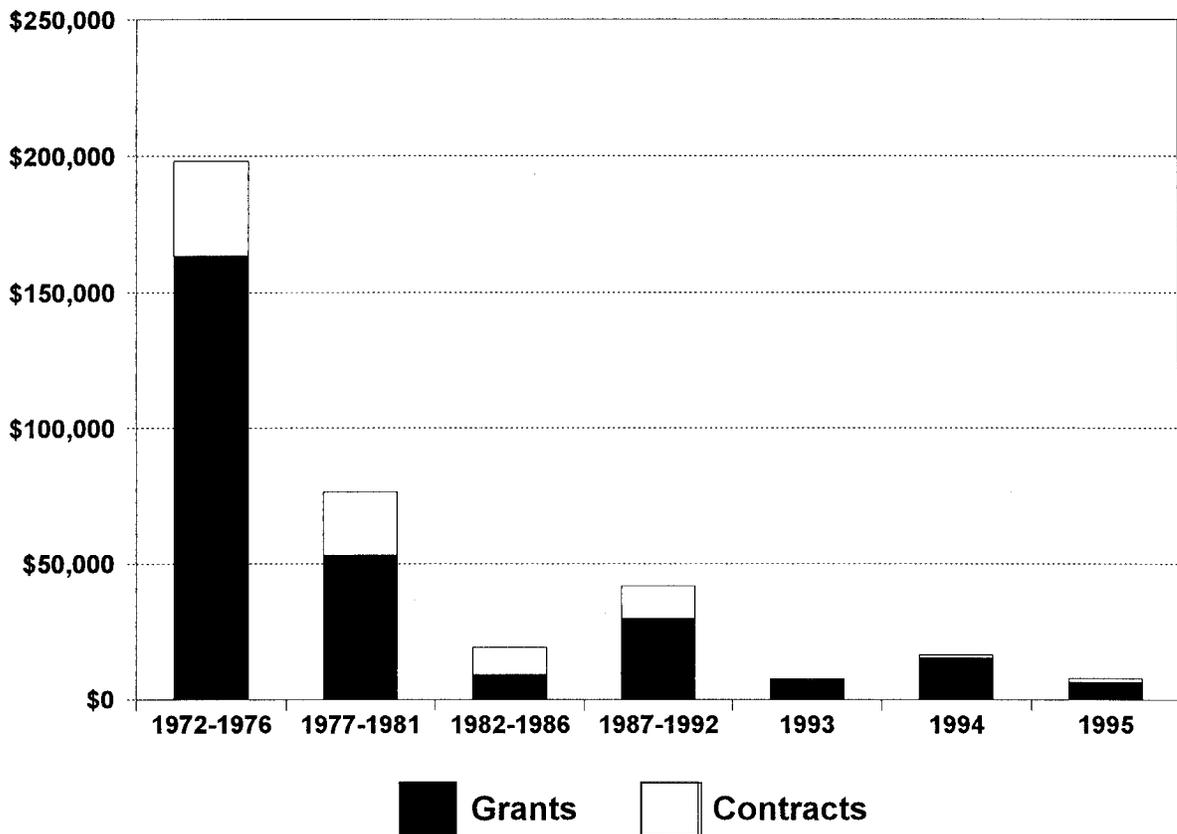
Number of Trainees



TYPE	1988	1989	1990	1991	1992	1993	1994	1995
Predoctoral	568	548	567	584	597	578	596	567
Postdoctoral	888	880	918	913	894	868	873	907
Total	1,456	1,428	1,485	1,497	1,491	1,446	1,469	1,474

**Construction/  
Renovation Funding  
Fiscal Years 1972-1995**

(Dollars in Thousands)



TYPE	1972-1976	1977-1981	1982-1986	1987-1992	1993	1994	1995
Grants	\$163,433	\$53,293	\$9,225	\$30,068	\$7,182	\$15,447	\$6,570
Contracts	34,644	23,232	10,093	11,935	346	1,052	1,430
Total	198,077	76,525	19,318	42,003	7,528	16,499	8,000

NOTE: Fiscal year 1990 includes \$10 million which was transferred to NCI from other NIH Institutes to partially fund several grants responding to an NIH Construction RFA.  
\*Includes repair and maintenance at the Frederick Cancer Research and Development Center.



# Appropriations of the NCI 1938-1996

	1938 through 1968.....	\$1,690,550,220	
	1969.....	185,149,500	
	1970.....	190,486,000	
	1971.....	230,383,000	
	1972.....	378,794,000	
	1973.....	492,205,000	
	1974.....	551,191,500	
	1975.....	691,666,000	1
<b>13.0%</b>			
<b>\$4,410,425,220</b>			
	1976.....	761,727,000	
	"TQ".....	152,901,000	2
	1977.....	815,000,000	
	1978.....	872,388,000	3
	1979.....	937,129,000	
	1980.....	1,000,000,000	4
	1981.....	989,355,000	5
	1982.....	986,617,000	6
	1983.....	987,642,000	7
	1984.....	1,081,581,000	8
	1985.....	1,183,806,000	
	1986.....	1,264,159,000	9
	1987.....	1,402,837,000	10
	1988.....	1,469,327,000	11
	1989.....	1,593,536,000	12
	1990.....	1,664,000,000	13
	1991.....	1,766,324,000	14
	1992.....	1,989,278,000	15
	1993.....	2,007,483,000	16
	1994.....	2,082,267,000	
	1995.....	2,135,119,000	17
	1996.....	2,251,084,000	18
<b>87.0%</b>			
<b>\$29,393,560,000</b>			
	<b>Total</b>		
	<b>(1938-1996).....</b>	<b>33,803,985,220</b>	

## Transition Quarter ("TQ") --

July 1, 1976 through September 30, 1976. The interim period in changing of the Federal Fiscal Year from July 1 through June 30 to October 1 through September 30.

- 1 Includes \$18,163,000 for training funds provided by Continuing Resolution.
- 2 Includes \$3,201,000 for training funds provided by Continuing Resolution.
- 3 Includes \$20,129,000 for training funds provided by Continuing Resolution.
- 4 1990 appropriation authorized under a Continuing Resolution.
- 5 Reflects 1981 rescission of \$11,975,000.
- 6 Amount included in continuing resolution. Includes \$47,988,000 transferred to the National Institute of Environmental Health Sciences for the National Toxicology Program.
- 7 Appropriated under Continuing Resolution and Supplemental Appropriation Bill.
- 8 Includes \$23,861,000 for training funds provided by a Continuing Resolution and \$4,278,000 in a Supplemental Appropriation Bill.
- 9 Includes \$6,000,000 from a Supplemental Appropriation Bill.
- 10 Authorized under Omnibus Continuing Resolution.
- 11 Authorized under Omnibus Continuing Resolution.
- 12 Appropriation prior to reduction contained in G.P. 517 (-\$19,122,000) and G.P. 215 (-\$2,535,000) and P.L. 100-436, Section 213, (-\$1,013,000).
- 13 Appropriation prior to reduction contained in P.L. 101-166 (-\$6,839,000) and P.L. 101-239 (-\$22,829,000).
- 14 Appropriation prior to reductions in P.L. 101-517 (-\$8,972,000 for salary and expense reduction; -\$42,568,000 for across-the-board reduction).
- 15 Appropriation prior to reductions in P.L. 102-170 (-\$21,475,000 for salary and expense reduction; -\$1,262,000 for travel reduction; \$15,000,000 transferred to other institutes for cancer research).
- 16 Appropriation prior to reductions in P.L. 102-294 (-\$16,060,000 for .8% reduction to all line items, -\$9,933,000 for S&E reduction, -\$139,000 for consultant services reduction.)
- 17 Appropriation prior to reductions in PL 103-211 (-\$1,883,000 for Procurement Reduction; -\$116,000 for SLUC Reduction; -\$1,052,000 for Bonus Pay Reduction). Includes \$218,199,000 of AIDS funding.
- 18 Includes \$225,790,000 of AIDS funding.

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**By-Pass Budget  
Requests  
Fiscal Years 1973-1998**

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<b>Fiscal Year</b>	<b>Request</b>
1973.....	\$550,790,000
1974.....	640,031,000
1975.....	750,000,000
1976.....	898,500,000
1977.....	948,000,000
1978.....	955,000,000
1979.....	1,036,000,000
1980.....	1,055,000,000
1981.....	1,170,000,000
1982.....	1,192,000,000
1983.....	1,197,000,000
1984.....	1,074,000,000
1985.....	1,189,000,000
1986.....	1,460,000,000
1987.....	1,570,000,000
1988.....	1,700,000,000
1989.....	2,080,000,000
1990.....	2,195,000,000
1991.....	2,410,000,000
1992.....	2,612,000,000
1993.....	2,775,000,000
1994.....	3,200,000,000
1995.....	3,600,000,000
1996.....	3,640,000,000
1997.....	2,977,000,000
1998.....	2,702,500,000

NOTE: Following the original passage of the National Cancer Act in December, 1971, a provision was included for the Director of the National Cancer Institute to submit a budget request directly to the President; hence it has come to be called the Bypass Budget. The Budget submitted for 1973 was the initial submission.

**Comparison of Dollars,  
Positions and Space  
Fiscal Years 1974-1995**

	Dollars		Positions		Space**	
	Obligations( \$000's)	Percent of Increase Over Prior Year	Actual Full-Time Permanent Employees	Percent of Increase Over Prior Year	Allocated Space (Square Feet)	Percent of Increase Over Prior Year
1974	581,149		1,805		381,436	
1975	699,320	20.3%	1,849	2.4%	382,485	0.3%
1976	760,751	8.8%	1,955	5.7%	387,324	1.3%
1977	814,957	7.1%	1,986	1.6%	428,285	10.6%
1978	872,369	7.0%	1,969	-0.9%	491,725	14.8%
1979	936,969	7.4%	1,973	0.2%	493,156	0.3%
1980	998,047	6.5%	1,837	-6.9%	467,730	-5.2%
1981	989,338	-0.9%	1,815	-1.2%	472,633	1.0%
1982	986,564	-0.3%	1,703	-6.2%	477,782	1.1%
1983	986,811	0.0%	1,731	1.6%	484,093	1.3%
1984	1,081,460	9.6%	1,698	-1.9%	466,890	-3.6%
1985	1,177,853	8.9%	1,596	-6.0%	466,890	0.0%
1986	1,210,284	2.8%	1,573	-1.4%	465,790	-0.2%
1987	1,402,790	15.9%	1,642	4.4%	465,790	0.0%
1988	1,468,435	4.7%	1,708	4.0%	458,556	-1.6%
1989	1,570,342	6.9%	1,701	-0.4%	483,778	5.5%
1990	1,644,330	4.7%	1,837	8.0%	489,604	1.2%
1991	1,712,669	4.2%	1,921	4.6%	499,396	2.0%
1992	1,947,571	13.7%	2,042 *	6.3%	477,067	-4.5%
1993	1,978,340	15.5%	1,951 *	-4.5%	493,186	3.4%
1994	2,076,218	6.6%	1,840 *	-5.7%	472,545	-4.2%
1995	2,129,369	7.6%	1,767 *	-4.0%	510,466	8.0%

\* Includes \$10,130 which was transferred to NCI from other NIH Institutes to partially fund several grants responding to a NIH Construction RFA.

\*\* Does not include space at the Frederick Cancer Research and Development Center.

\*\*\* Source NIH TDCS 866

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**Personnel  
Resources  
Fiscal Years  
1985-1995**

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Fiscal Year	--Number of Full Time Equivalents--			Number of Employees
	Cancer	AIDS	Total	
1985	2,145	85	2,230	2,195
1986	2,003	98	2,101	2,096
1987	1,981	129	2,110	2,272
1988	2,137	146	2,283	2,302
1989	1,985	188	2,173	2,201
1990	1,960	232	2,192	2,322
1991	2,045	300	2,345	2,437
1992	2,219	306	2,525	2,604
1993	2,184	300	2,484	2,425
1994	2,081	301	2,382	2,307
1995	1,936	283	2,219	2,250

**Acquired Immunodeficiency  
Syndrome (AIDS)  
Funding by Activity  
Fiscal Year 1995**

(Dollars in Thousands)

**By Mechanism:**

Research Project Grants	\$34,394
Cancer Center Grants	3,474
Cooperative Clinical Groups	310
Other Grants	10
R&D Contracts	70,267
Intramural Research	101,393
Research Management and Support	7,582
Total, NCI	<u>\$217,430</u>

**By Research Thrust:**

Cancer Causation	\$73,640
Detection and Diagnosis Research	7,290
Treatment Research	105,959
Cancer Biology	27,067
Total Research	<u>213,956</u>
Cancer Center Grants	3,474
Total, NCI	<u>\$217,430</u>

**By Division:**

Division of Cancer Biology, Diagnosis and Centers	\$26,188
Division of Cancer Treatment	77,293
Division of Cancer Etiology	48,587
Frederick Cancer Research and Development Center	27,007
Division of Extramural Activities	1,515
Office of the Director	5,524
NIH Management Fund*	31,316
Total, NCI	<u>\$217,430</u>

*\*Supports common services shared within the NIH; in AIDS the Management Fund is used principally for support costs associated with NCI's activities at the NIH Clinical Center.*

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**Acquired Immunodeficiency  
Syndrome (AIDS)  
Funding History  
Fiscal Years 1983-1995**

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*(Dollars in Thousands)*

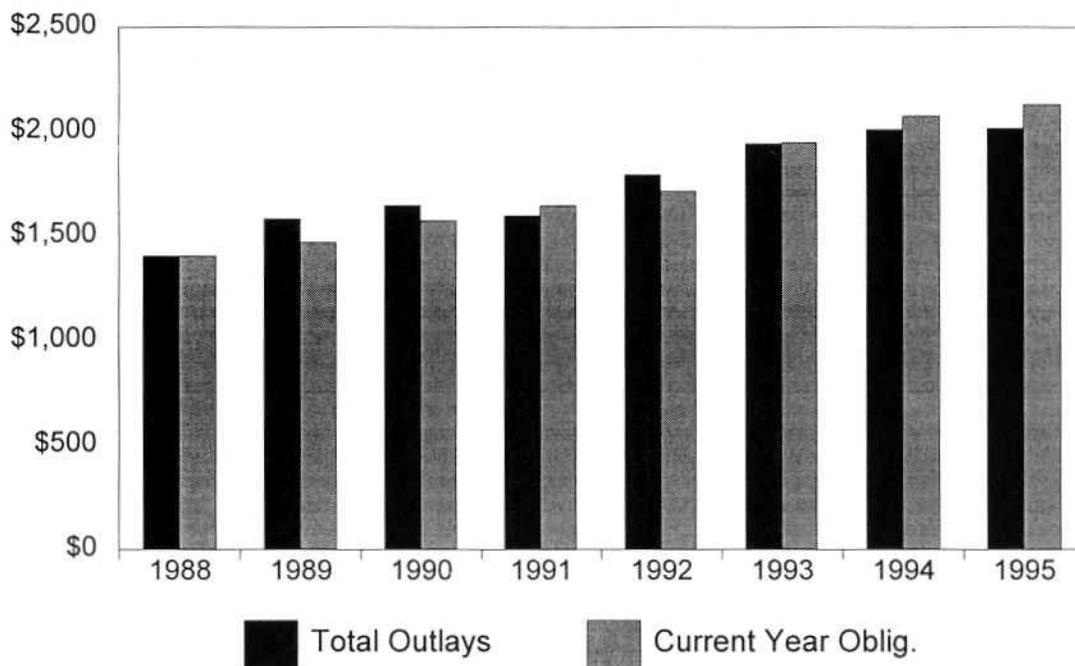
<b>Fiscal Year</b>	<b>NCI Amount</b>	<b>NIH Amount</b>	<b>% NCI To NIH</b>
1983	\$9,790	\$21,668	45%
1984	16,627	44,121	38%
1985	26,874	63,737	42%
1986	45,050	134,667	33%
1987	63,755	260,907	24%
1988	89,944	473,285	19%
1989	122,247	627,076	19%
1990	150,304	740,509	20%
1991	160,869	799,821	20%
1992	165,668	1,047,294	16%
1993	173,029	1,073,957	16%
1994	212,868	1,298,996	16%
1995	217,430	1,333,600	16%

**Note:**

*Effective 1992 funding for the Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA) was included*

**National Cancer Institute  
Obligations and Outlays  
Fiscal Year 1987-1995**

(Dollars in Millions)



\$ in Millions	1988	1989	1990	1991	1992	1993	1994	1995
Prior Year Outlays	\$723	\$815	\$885	\$856	\$831	\$1,099	\$1,108	\$1,016
Current Year Outlays	680	765	759	739	961	843	901	1,000
Total Outlays	1,403	1,580	1,644	1,595	1,792	1,942	2,009	2,016
Current Year Obligations	1,403	1,468	1,570	1,644	1,713	1,948	2,076	2,129

**Obligations:** Orders placed, grants awarded, contract increments funded, salaries earned and similar financial transactions which legally utilize or reserve an appropriation for expenditure.  
**Outlays:** Payments (cash or checks) made from appropriations.

NATIONAL  
CANCER  
INSTITUTE

NIH Publication No. 96-512  
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